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INDICIS NOMINUM FAMILIARUM ANGIOSPERMARUM PRODROMUS

A. A. Bullock (Kew)

It has long been known that many of the more commonly used names of plant Families are illegitimate. The bibliographic research required to establish dates of valid publication, as well as legitimacy, however, has seemed scarcely worth while. Some of the difficulties were pointed out by Sprague (Journ. Bot. 60: 69—73) as long ago as 1922, when he clarified the position in regard to a few difficult cases. In 1900 Kuntze and Post (Allg. Bot. Zeitschr. 1900: 110) gave a list of family names which they had corrected according to the Paris Codex of 1867, but their corrections do not always apply under the Paris Code of 1954, and their work was limited also by acceptance taxonomically of the families included in the *Pflanzenfamilien* and nomenclaturally of the so-called family names used by Adanson and others prior to the *Genera Plantarum* of Jussieu (1789).

In order to obtain uniformity and stability Sprague and Lanjouw proposed to the Amsterdam Congress (1935) that all the family names appearing (with approximately the same circumscription) in both the *Pflanzenfamilien* and in Bentham and Hooker's *Genera Plantarum*, should be preserved by conservation. The list included 185 names, plus *Papilionaceae* which, it was proposed, should be a legitimate name if *Leguminosae* is divided into groups of family rank. The places and dates of valid publication were not given, but the list was published in Sprague's *Synopsis of Proposals .... Amsterdam* 1935. Further names were submitted to the Stockholm (1950) Congress by Camp, Little and Wheeler (Lanjouw, Syn. Prop. .... Stockholm 1950, pp. 218—221) and the full list was printed as Appendix 5A in the International Code of 1952, as a list of *Nomina Familiarum Conservanda* [*Proposita*].

At the Paris Congress (1954), however, there was some opposition to the acceptance of the list and the Editorial Committee was expressly forbidden to reprint it in the proposed new edition of the Code. The result is that one is left with the irregularly formed family names *Palmae, Gramineae, Cruciferae, Leguminosae, Guttiferae, Umbelliferae, Labiatae* and *Compositae* (with *Papilionaceae* as a make-weight) as the only conserved family names; these also have the added distinction of being the only groups which may bear two legitimate names. The alternative names, clearly proposed in the Sprague and Lanjouw list, are subject to determination by application of the remaining rules of the Code.

The present list is the result of an attempt to find all the validly published family names. The first difficulty was to decide whether the provisions of Art. 5 could be strictly applied for this purpose. It quickly became evident that they could not, but

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Art. 5 may be interpreted very broadly. "Relative order" of categories has nothing to do with the terms denoting the categories and so long as the position in the hierarchy is maintained I have accepted "family", "order", "natural order" as synonymous. Indeed, some authors used all these terms indiscriminately for the same group; the strict modern use of the term "family" is of comparatively recent date. [1] It became evident also that the Code, supposedly applying to all taxa up to the rank of order, has been made and modified mainly to apply to names of genera and taxa below that rank.

Many names in the list are proposed for conservation; the corresponding rejected names are noted in the same entry and they are also separately listed. There are remarkably few homonyms. Some explanation of the methods used is called for, since they are somewhat arbitrary and I have tended to treat each name on its own merits rather than by applying a set of rules. I found that 1753 was an impossible commencing date and the difficulties of interpretation [2] at this early period convinced me that Jussieu's *Genera Plantarum* (1789) is the earliest work in which modern families became recognisable. This, I propose, should be the work from which family nomenclature begins. Typification has been carried out by the application of Article 18 in reverse. That Article provides for the formation of a new family name from the stem of the name of its type genus, but it is abundantly clear that the older authors did not by any means do this and the imposition of a "type-method" and modern rules on to a system where neither was actually applied leads often to a ludicrous position. For example, Jussieu (allowing for corrected spellings) included *Verbena* in *Viticaceae*, which is by Art. 18 typified by *Vitex*. Later he thought the name *Viticaceae* might be confused with *Vitaceae* (typified by *Vitis*) and so changed the name to *Verbenaceae*. Under Art. 18 *Verbenaceae* is typified by *Verbena*; under any other relevant Article it is merely an illegitimate name-change and is typified by *Vitex*. I have, of course, adopted the former position under Art. 18 and proposed *Verbenaceae* for conservation.

A somewhat different situation often arises when two groups have varied between family and infra-family rank in different classifications. Thus the taxon including *Agave* first appeared as an "infra" group of *Haemodoraceae*, but when *Agavaceae* was first validly published it included the earlier *Haemodoraceae* and was, therefore, illegitimate. In this and other cases I have proposed conservation of the illegitimate name from a later date and with a different circumscription (but the same type).

My treatment of the alternative names of the conserved family names of Art. 18 follows the list of the 1952 Code except in the case of *Guttiferae*. Here the alternative must be *Clusiaceae*, not *Hypericaceae*, since the latter is very frequently regarded as a distinct family which could not then by any means be called *Guttiferae*. *Clusiaceae* was actually proposed as a suitable alternative name for *Guttiferae* by Lindley in 1836, and it requires conservation against the earlier (1832) *Symphoniaceae*. *Hypericaceae* is the earliest of all these names, dating from 1789, but it did not include the *Clusiaceae* of Lindley.

Some family names are proposed for conservation when it is clear that the

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[1] A similar situation exists in regard to "genus" and "species" in Necker's "Elementa Botanica", the generic names in which are applied to "species naturales", and species are referred to as "proles".

[2] In his 'Familles' (1763) Adanson frequently used modern family names, but here the resemblance of his families to the modern concept ended. I have excluded also the names in Giseke's edition (1792) of his own and Fabricius' transcription of Linnaeus' *Praelectiones in ordines naturales plantarum*. Most of the names in that work are illegitimate, and the families (*ordines naturales*) are often extremely heterogeneous. — A. A. B.

rejected name will also be required in modern classifications. It must be emphasized that (except in the case of homonyms) rejected names are only to be rejected so long as they are regarded as synonyms of the conserved name. *Myricaceae*, when first described, included *Myrica* and *Casuarina*, the latter being the type of the earlier *Casuarinaceae*, which also included *Myrica*. *Myricaceae*, therefore, is illegitimate and may be retained only by conservation; since none will now regard *Casuarina* and *Myrica* as confamilial, *Casuarinaceae* also may be retained.

It is not claimed that all such cases have been worked out; still less is it claimed that this list is complete, or that the earliest publication of names always has been found. [1]

A further licence I have taken concerns spelling. The rules enjoin that except in the eight specified exceptions family names end in *-aceae*; the rules do not specify that incorrect endings must be of Latin form to ensure valid publication and I have often accepted French, less often German, endings in order that the real authors of family names may receive whatever credit is due to them.

One difficulty I have encountered is in finding family names published during the last fifty years. The absence of some of these from the list will be noted by botanists interested in the groups concerned. I should be grateful for any such additions and also for necessary corrections of spelling and bibliography, in order that the list may be presented at the Montreal (1959) Congress in as complete and accurate a state as is possible.

It must be borne in mind that in preparing this list I have used Jussieu's *Genera* (1789) as a starting point. I have not found it necessary to establish the month of publication, but it seems reasonable to suggest that an arbitrary date such as 1st January would be convenient. Further, my reversal of Art. 18 (*i.e.* a family name derived from the stem of a generic name is to be typified by the genus to which that name applies)will need the sanction of an International Congress. Some few botanists consider that the insertion of Note 1 to Art. 18 was not authorized by the Paris (1954) Congress. I have, however, taken the view that since a similar note was authorized for Art. 19, it would be illogical to exclude the note from Art. 18.

It should be noted that I do not regard any name in the present list as being here validly published. The relatively few names published with French (or German) endings I have regarded as being in Latin if they were formed from the stem of a generic name. This may meet with opposition, but it seemed to me better to refer back to an original description rather than to a later publication where only the correctly formed name was given.

At Paris (1954) the Committee for Spermatophyta was entrusted with the task of formulating a new list of family names proposed for conservation. This present list is the result of a first attempt to state the problem. The Committee may suggest that, when corrected by correspondents and argument by those interested it should be regarded as a basic list to be conserved as a whole, or as a new starting point for family names; or it may merely use it as a preliminary reference list. In any event, the author will be very pleased to receive constructive criticisms and corrections, or if botanists think I may be offended, their criticisms will be gladly received by Dr. H. W. Rickett, Secretary to the Committee, at the New York Botanical Garden.

Finally, I wish to express my gratitude to Dr. J. Hutchinson for his assistance in the early stages of this work; he had carried out an immense amount of bibliographical work on family names for the second edition of his *Families of Flowering*

[1] Names in spaced roman type in the list are those which I have established as being illegitimate; many others may be illegitimate, but for this preliminary list the fact is not important. Names in heavy face type are proposed for conservation. — A. A. B.

Plants,[2] and his notes and references were freely placed at my disposal. I have to thank also my colleagues on the staff at Kew for their interest, suggestions and help in many ways, particularly for assistance by Mr. N. Y. Sandwith and Mr. R. D. Meikle for the derivations of names of Greek origin.

Committee for Spermatophyta

The Committee for Spermatophyta has been asked to study Mr. Bullock's list of familial names and to make recommendations to the congress for conservation of any for which they feel conservation is desirable. The Committee solicits comments and opinions on Mr. Bullock's proposals for conservation; omissions, bibliographic errors, arguments for or against conservation. Such communications should be addressed to the Secretary of the committee. They must be received by 1 September 1958.

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Abaminaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 3. 1858 ('*Abamineae*').
T.: *Narthecium* Hudson, nom. cons. (syn. *Abama* Adanson)

Abolbodaceae Nakai, Ord. Fam. etc. App. 221. 1943.
T.: *Abolboda* Kunth

Abrophyllaceae Nakai, Ord. Fam. etc. App. 243. 1943.
T.: *Abrophyllum* J. D. Hooker

Acalyphaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 258. 1858 ('*Acalypheae*').
T.: *Acalypha* Linnaeus

Acanthaceae A. L. de Jussieu, Gen. Pl. 102. 1789 ('*Acanthi*').
T.: *Acanthus* Linnaeus

Acarnaceae Link, Handb. 1: 684. 1829.
T.: *Atractylis* Linnaeus (syn. *Acarna* Allioni non Hill)

Aceraceae A. L. de Jussieu, Gen. Pl. 251. 1789 ('*Acera*').
T.: *Acer* Linnaeus

Achariaceae Harms in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 256. 1897.
T.: *Acharia* Thunberg

Achatocarpaceae Heimerl in Engler [et Prantl], Nat. Pflanzenfam. ed. 2. 16C: 174. 1934.
T.: *Achatocarpus* Triana

Achraceae Roberty, Bull. Inst. Franç. Afr. Noire 15: 1414. 1953 (nom. illeg. ≡ *Sapotaceae*).

Acoraceae C. A. Agardh, Aphor. Bot. 133. 1822 ('*Acoroideae*').
T.: *Acorus* Linnaeus

Actinidiaceae van Tieghem, Journ. de Bot. 13: 173. 1899 (nom. cons. prop. vs. *Saurauiaceae*).
T.: *Actinidia* Lindley

Adenogrammataceae Nakai, Journ. Jap. Bot. 18: 101. 1942.
T.: *Adenogramma* H. G. Reichenbach

Adoxaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 77. 1858.
T.: *Adoxa* Linnaeus

Aegiceratataceae Blume, Ann. Sc. Nat. ser. 2. 2: 97. 1834 ('*Aegicereae*').
T.: *Aegiceras* Gaertner

Aesculaceae Lindley, Nat. Syst. ed. 2. 84. 1836 (nom. cons. prop. vs. *Paviaceae*).
T.: *Aesculus* Linnaeus

Aextoxicaceae Pax, Jahresb. Schles. Ges. Breslau 94(2): 17-21. 1917.
T.: *Aextoxicon* Ruiz et Pavon

Agapanthaceae Lotsy, Vortr. Bot. Stammesg. 3(1): 732, *f.* 502. 1911.
T.: *Agapanthus* L'Héritier, nom. cons.

Agavaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 8. 1858 ('*Agaveae*'; nom. cons. prop. vs. *Agavineae*).
T.: *Agave* Linnaeus

Agavineae Dumortier, Anal. Fam. Pl. 57. 1829 (nom. illeg., syn. *Haemodoraceae*; nom. rej. prop. vs. *Agavaceae*).
T.: *Agave* Linnaeus

Agdestidaceae Nakai, Journ. Jap. Bot. 18: 104. 1942.
T.: *Agdestis* De Candolle

Aggregatae C. H. Schultz, Nat. Syst. Pflanzenr. 368. 1832 (nom. illeg. ≡ *Dipsacaceae*).

[2] To be published in 1958 by the Oxford University Press.

Agialidaceae van Tieghem, Ann. Sc. Nat. ser. 9. 4: 255. 1906 (nom. illeg., syn. *Balanidaceae*).
T.: *Balanites* Delile (nom. cons. vs. *Agialid* Adanson)

Agrimoniaceae S. F. Gray, Arr. Brit. Pl. 2: 574. 1821.
T.: *Agrimonia* Linnaeus

Ailanthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 223. 1858 ('*Ailantheae*').
T.: *Ailanthus* Desfontaines, nom. cons.

Aizoideae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 353. 1858 (nom. illeg., syn. *Ficoidaceae*).
T.: *Aizoon* Linnaeus

Akaniaceae Stapf, Kew Bull. 1912: 380. 1912.
T.: *Akania* J. D. Hooker

Alangiaceae De Candolle, Prodr. 3: 203. 1828 ('*Alangieae*').
T.: *Alangium* Lamarck, nom cons.

Alchemillaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 167. 1858 ('*Alchemilleae*').
T.: *Alchemilla* Linnaeus

Aldrovandaceae Nakai, Journ. Jap. Bot. 24: 10. 1949.
T.: *Aldrovanda* Linnaeus

Alismataceae Ventenat, Tabl. Regne Vég. 2: 157. 1799 ('*Alismoideae*').
T.: *Alisma* Linnaeus

Alliaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 32. 1858.
T.: *Allium* Linnaeus

Allioniaceae Horaninow, Prim. Lin. Syst. Nat. 68. 1834 (nom. illeg. vs. *Nyctaginaceae*).
T.: *Allionia* Linnaeus, nom. cons., non Loefling

Aloeaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 27. 1858 ('*Aloineae*').
T.: *Aloe* Linnaeus

Alsinaceae Lamarck et De Candolle, Fl. France ed. 3. 5: 766. 1805 ('*Alsineae*').
T.: *Arenaria* Linnaeus (syn. *Alsine* Scopoli)

Alsodeiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 197. 1858 ('*Alsodineae*').
T.: *Rinorea* Aublet (syn. *Alsodeia* Thouars)

Alstroemeriaceae Dumortier, Anal. Fam. Pl. 57. 1829.
T.: *Alstroemeria* Linnaeus

Altingiaceae Lindley, Veg. Kingdom 253. 1846.
T.: *Altingia* Noronha

Alypinae Hoffmansegg et Link, Fl. Port. 1: 451. 1809 (nom. illeg. ≡ *Globulariaceae*).
T.: *Globularia* Linnaeus

Amaranthaceae A. L. de Jussieu, Gen. Pl. 87. 1789 ('*Amaranthi*').
T.: *Amaranthus* Linnaeus

Amaryllidaceae Jaume St. Hilaire, Expos. Fam. Nat. 1: 134. *t. 11.* 1805 (nom. cons. prop. vs. *Narcissaceae*).
T.: *Amaryllis* Linnaeus

Amborellaceae Pichon, Bull. Mus. Nat. Hist. Paris ser. 2. 20: 384. 1948.
T.: *Amborella* Baillon

Ambrosiaceae Dumortier, Anal. Fam. Pl. 15. 1829; Link Handb. 1: 816. 1829.
T.: *Ambrosia* Linnaeus

Amentaceae A. L. de Jussieu, Gen. Pl. 407. 1789 (nom. illeg.; fam. heterogen. incl. *Fagaceae, Corylaceae,* etc.).

Ammanniaceae Horaninow, Prim. Lin. Syst. Nat. 86. 1834 (nom. illeg. vs. *Lythraceae*).
T.: *Ammannia* Linnaeus

Amomeae A. Richard, Nouv. Élém. Bot. ed. 4. 438. 1828 (nom. rej. prop. vs. *Zingiberaceae*).
T.: *Amomum* Linnaeus

Ampelideae Kunth in Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 5: 222. 1822 (nom. illeg. ≡ *Vitaceae*).
T.: *Vitis* Linnaeus

Amygdalaceae Bartling, Ord. Nat. Pl. 404. 1830 ('*Amygdaleae*').
T.: *Amygdalus* Linnaeus

Amyrideae R. Brown in Tuckey, Narr. Exped. Congo 431. 1818 (nom. rej. prop. vs. *Burseraceae*).
T.: *Amyris* Linnaeus

Anacardiaceae R. Brown in Tuckey, Narr. Exped. Congo 431. 1818 ('*Anacardieae*'; nom. cons. prop. vs. *Terebinthaceae* et *Cassuviaceae*).
T.: *Anacardium* Linnaeus

Ancistrocladaceae Planchon, Ann. Sc. Nat. ser. 3. 13: 316. 1849 ('*Ancistrocladeae*').
T.: *Ancistrocladus* Planchon, nom. cons.

Androsynaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 61. 1866 ('*Androsyneae*').
T.: *Androsyne* Salisbury

Anemonaceae Bartling, Ord. Nat. Pl. 252. 1830.
T.: *Anemone* Linnaeus

Anisophylleaceae Ridley, Fl. Malay Penins. 1: 700. 1922 ('*Anisophylleae*').
T.: *Anisophyllea* R. Brown

Annonaceae A. L. de Jussieu, Gen. Pl. 283. 1789 ('*Anonae*').
T.: *Annona* Linnaeus

Anomochloaceae Nakai, Ord. Fam. etc. App. 222. 1943.
T.: *Anomochloa* Brongniart

Anrederaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 357. 1858 ('*Anredereae*').
T.: *Anredera* A. L. de Jussieu

Anthemidaceae Link, Handb. 1: 752. 1829 ('*Anthemideae*').
T.: *Anthemis* Linnaeus

Anthericaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 27. 1858 ('*Anthericeae*').
T.: *Anthericum* Linnaeus

Anthobolaceae Dumortier, Anal. Fam. Pl. 15. 1829 ('*Anthoboleae*').
T.: *Anthobolus* R. Brown

Antidesmeae Endlicher, Gen. Pl. 287. 1837 (nom. illeg. vs. *Stilaginaceae*).
T.: *Antidesma* Linnaeus

Antirrhineae De Candolle et Duby, Bot. Gall. ed. 2. 1: 342. 1828 (nom. illeg. vs. *Scrophulariaceae*).
T.: *Antirrhinum* Linnaeus

Antoniaceae J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined. — [J. G. Agardh Theoria Syst. Pl. Fam. Phan. 307. 1858 ('*Antonieae*'; nomen subnudum)].
T.: *Antonia* Pohl

Aparineae Hoffmansegg et Link, Fl. Port. 2: 38. 1820 (nom. illeg. vs. *Rubiaceae*).
T.: *Galium* Linnaeus (syn. *Aparine* Hill)

Aphyllanthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 2. 1858 ('*Aphyllantheae*').
T.: *Aphyllanthes* Linnaeus

Apiaceae Lindley, Nat. Syst. ed. 2. 21. 1836 (nom. alt. vs. *Umbelliferae*).
T.: *Apium* Linnaeus

Apocynaceae A. L. de Jussieu, Gen. Pl. 143. 1789 ('*Apocineae*').
T.: *Apocynum* Linnaeus

Aponogetonaceae Planchon, Ann. Sc. Nat. ser. 3. 1: 119. 1844 ('*Aponogetaceae*').
T.: *Aponogeton* Linnaeus f.

Apostasiaceae Blume, Tijdschr. Nat. Gesch. Phys. 1: 137. 1834 ('*Apostasieae*').
T.: *Apostasia* Blume

Aptandraceae van Tieghem, Bull. Soc. Bot. France 43: 568. 1896.
T.: *Aptandra* Miers

Aquifoliaceae Bartling, Ord. Nat. Pl. 376. 1830 (nom. illeg. ≡ *Ilicaceae*).
T.: *Ilex* Linnaeus (syn. *Aquifolium* Gaertner, nom. illeg.)

Aquilariaceae De Candolle, Prodr. 2: 59. 1825 ('*Aquilarineae*').
T.: *Aquilaria* Lamarck, nom. cons.

Araceae A. L. de Jussieu, Gen. Pl. 23. 1789 ('*Aroideae*').
T.: *Arum* Linnaeus

Aragoaceae D. Don, Edinburgh New Phil. Journ. 19: 113. 1835.
T.: *Aragoa* Kunth

Araliaceae A. L. de Jussieu, Gen. Pl. 217. 1789 ('*Araliae*').
T.: *Aralia* Linnaeus

Arbutaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 106. 1858 ('*Arbuteae*').
T.: *Arbutus* Linnaeus

Arceuthobiaceae van Tieghem, Bull. Soc. Bot. France 44: 105. 1897.
T.: *Arceuthobium* Bieberstein, nom. cons.

Arctostaphylaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 106. 1858 ('*Arctostaphyleae*').
T.: *Arctostaphylos* Adanson

Ardisiaceae Bartling, Ord. Nat. Pl. 163. 1830 (nom. illeg. syn. *Myrsinaceae*).
T.: *Ardisia* Swartz, nom. cons.

Arecaceae C. H. Schultz, Nat. Syst. Pflanzenr. 317. 1832 (nom. alt. vs. *Palmae*).
T.: *Areca* Linnaeus

Aristolochiaceae A. L. de Jussieu, Gen. Pl. 72. 1789 ('*Aristolochiae*').
T.: *Aristolochia* Linnaeus

Aristoteliaceae Dumortier, Anal. Fam. Pl. 41. 1829.
T.: *Aristotelia* L'Héritier, nom. cons. vs. *Aristotela* Adanson, nom. rej.

Arjonaceae van Tieghem, Bull. Soc. Bot. Fr. 43: 548. 1896 ('*Arionaceae*').
T.: *Arjona* Cavanilles

Armeriaceae Horaninow, Prim. Lin. Syst. Nat. 68. 1834 (nom. illeg. vs. *Plumbaginaceae*).
T.: *Armeria* Willdenow, nom. cons.

Aroideae A. L. de Jussieu; vide *Araceae*.

Artocarpaceae R. Brown in Tuckey, Narr. Exped. Congo 454. 1818 ('*Artocarpeae*').
T.: *Artocarpus* J. R. et G. Forster, nom. cons.

Asaroideae Ventenat, Tabl. Regne Vég. 2: 226. 1799 (nom. illeg., syn. *Aristolochiaceae*).
T.: *Asarum* Linnaeus

Asclepiadaceae R. Brown, Mem. Wern. Soc. 1: 12. 1809 ('*Asclepiadeae*').
T.: *Asclepias* Linnaeus

Asparagaceae A. L. de Jussieu, Gen. Pl. 46. 1789 ('*Asparagi*').
T.: *Asparagus* Linnaeus

Asphodelaceae A. L. de Jussieu, Gen. Pl. 51. 1789 ('*Asphodeli*').
T.: *Asphodelus* Linnaeus

Aspidistraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 31. 1858 ('*Aspidistreae*').
T.: *Aspidistra* Ker-Gawler

Asteliaceae Dumortier, Anal. Fam. Pl. 59. 1829.
T.: *Astelia* R. Brown, nom. cons.
Asteraceae Link, Handb. 1: 731. 1829 ('*Asteroideae*'; nom. nov. vs. *Corymbiferae* A. L. de Jussieu, 1789; nom. alt. vs. *Compositae*).
T.: *Aster* Linnaeus
Asteranthaceae Knuth, Notizbl. Bot. Gart. Berlin 11: 1036. 1934. — Knuth in Engler Pflanzenreich 4(219B): 1. *cum fig.* 1939.
T.: *Asteranthos* Desfontaines
Asteropeiaceae?
T.: *Asteropeia* Thouars
Atherospermaceae R. Brown in Flinders, Voy. Terra Austr. 2: 553. 1814 ('*Atherospermeae*').
T.: *Atherosperma* Labillardière
Atriplices A. L. de Jussieu, Gen. Pl. 83. 1789 (nom. rej. prop. vs. *Chenopodiaceae*).
T.: *Atriplex* Linnaeus
Aucubaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 303. 1858.
T.: *Aucuba* Thunberg
Aurantiaceae A. L. de Jussieu, Gen. Pl. 259. 1789 ('*Aurantia*').
T.: *Citrus* Linnaeus
Austrobaileyaceae Croizat, Journ. Cactus and Succ. Soc. Amer. 15: 64. 1943.
T.: *Austrobaileya* C. T. White
Averrhoaceae J. Hutchinson, Fam. Fl. Pl. ed. 2, 1: ined.
T.: *Averrhoa* Linnaeus
Avicenniaceae Schnizlein, Ic. Fam. Nat. Regni Veg. 2: *t.* 137. 1843-70 (1856).
T.: *Avicennia* Linnaeus

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Balanitaceae Endlicher, Ench. Bot. 547. 1841 ('*Balaniteae*').
T.: *Balanites* Delile, nom. cons.
Balanophoraceae L. C. et A. Richard, Mém. Mus. Nat. Hist. Paris 8: 429. 1822 ('*Balanophoreae*').
T.: *Balanophora* J. R. et G. Forster
Balanopsidaceae Bentham in Bentham et J. D. Hooker, Gen. Pl. 3: 341. 1880 ('*Balanopseae*').
T.: *Balanops* Baillon
Balsamaceae Lindley, Nat. Syst. ed. 2. 188. 1836 (nom. illeg., syn. *Altingiaceae*).
T.: *Liquidambar* Linnaeus
Balsameaceae Dumortier, Anal. Fam. Pl. 36. 1829 (nom. illeg., syn. *Burseraceae*).
T.: *Commiphora* Jacquin, nom. cons. vs. *Balsamea* Gleditsch, nom. rej.
Balsaminaceae De Candolle, Prodr. 1: 685. 1824 ('*Balsamineae*').
T.: *Impatiens* Linnaeus (syn. *Balsamina* Gaertner, nom. illeg.)
Bambusaceae Nakai, Ord. Fam. etc. App. 223. 1943.
T.: *Bambusa* Retzius (orth. mut. Schreber; nom. cons. prop.)
Barbeuiaceae Nakai, Journ. Jap. Bot. 18: 105. 1942.
T.: *Barbeuia* Thouars
Barbeyaceae Rendle in Thiselton-Dyer, Fl. Trop. Afr. 6(2): 14. 1916.
T.: *Barbeya* Schweinfurth
Barclayaceae Li, Amer. Midland Nat. 54: 40. 1955.
T.: *Barclaya* Wallich
Barreriaceae Martius, Consp. Regni Veg. 41. 1835 (nomen).
T.: *Poraqueiba* Aublet (syn. *Barreria* Scopoli, non Linnaeus)
Barringtoniaceae Lindley, Veg. Kingdom, ed. 2. 754. *cum fig.* 1847.
T.: *Barringtonia* J. R. et G. Forster
Basellaceae Moquin-Tandon, Chenop. Monogr. Enum. p. x. 1840.
T.: *Basella* Linnaeus
Batidaceae Meisner, Pl. Vasc. Gen. 349. 1842 ('*Batideae*').
T.: *Batis* Linnaeus
Baueraceae Lindley, Nat. Syst. 50. 1830.
T.: *Bauera* Andrews
Begoniaceae C. A. Agardh, Aphor. Bot. 200. 1823.
T.: *Begonia* Linnaeus
Belangeraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 337. 1858 ('*Belangereae*').
T.: *Belangera* Cambessèdes
Belvisieae R. Brown, Trans. Linn. Soc. London 13: 222. 1821 (nom. rej. prop. vs. *Lecythidaceae*).
T.: *Napoleona* Beauvois (syn. *Belvisia* Desvaux)
Berberidaceae A. L. de Jussieu, Gen. Pl. 286. 1789 ('*Berberides*').
T.: *Berberis* Linnaeus
Bertyaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 190. 1858.
T.: *Bertya* Planchon
Berzeliaceae Nakai, Ord. Fam. etc. App. 241. 1943.
T.: *Berzelia* Brongniart
Betulaceae S. F. Gray, Arr. Brit. Pl. 2: 243. 1821 ('*Betulideae*').
T.: *Betula* Linnaeus

Biebersteiniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 167. 1858 (*'Biebersteinieae'*).
T.: *Biebersteinia* F. E. L. von Fischer

Bifariaceae?
T.: *Bifaria* van Tieghem (syn. tax. *Korthalsella* van Tieghem)

Bignoniaceae A. L. de Jussieu, Gen. Pl. 137. 1789 (*'Bignoniae'*).
T.: *Bignonia* Linnaeus

Bixaceae Kunth, Diss. Malv. etc. 17. 1822 (*'Bixineae'*).
T.: *Bixa* Linnaeus

Blackwelliaceae C. H. Schultz, Nat. Syst. Pflanzenr. 444. 1832 (nom. illeg. ≡ *Homaliaceae*).
T.: *Homalium* Jacquin (syn. *Blackwellia* A. L. de Jussieu)

Blattiaceae Niedenzu in Engler et Prantl, Nat. Pflanzenfam. 3(7): 16, *f.* 7-8. 1892 (nom. illeg. vs. *Henslowiaceae*, et nom. rej. prop. vs. *Sonneratiaceae*).
T.: *Sonneratia* Linnaeus f., nom. cons. vs. *Blatti* Adanson, nom. rej.

Blyxaceae Nakai, Journ. Jap. Bot. 24: 14. 1949.
T.: *Blyxa* Thouars

Bolivariaceae Grisebach, Gen. et Sp. Gent. 20. 1839.
T.: *Bolivaria* Chamisso et Schlechtendal

Bombacaceae Kunth, Diss. Malv. etc. 5. 1822 (*'Bombaceae'*).
T.: *Bombax* Linnaeus

Bonnetiaceae Beauvisage, Contrib. Étud. Anat. Fam. Ternstroem. 256. 1920.
T.: *Bonnetia* Martius et Zuccarini, nom. cons., non Schreber, nec Necker

Bontiaceae Horaninow, Prim. Lin. Syst. Nat. 77. 1834 (nom. illeg. vs. *Myoporaceae*).
T.: *Bontia* Linnaeus

Boopideae Cassini, Dict. Sc. Nat. 5 (Suppl.): 26. 1817 (nom. rej. prop. vs. *Calyceraceae*).
T.: *Boopis* Jussieu

Boraginaceae A. L. de Jussieu, Gen. Pl. 143. 1789 (*'Borragineae'*).
T.: *Borago* Linnaeus

Boroniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 229. 1858 (*'Boronieae'*).
T.: *Boronia* J. E. Smith

Botryodendraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 231. 1858 (*'Botryodendreae'*).
T.: *Meryta* J. R. et G. Forster (syn. *Botryodendrum* Endlicher)

Bougainvilleaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 364. 1858 (*'Bugainvilleae'*).
T.: *Bougainvillea* A. L. de Jussieu, corr. Spach, nom. cons.

Brassicaceae Lindley, Nat. Syst. ed. 2. 58. 1836 (nom. alt. vs. *Cruciferae*).
T.: *Brassica* Linnaeus

Bretschneideraceae Radlkofer in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 3: 209. 1907.
T.: *Bretschneidera* W. B. Hemsley

Brexiaceae Lindley, Nat. Syst. 112. 1830.
T.: *Brexia* Thouars, nom. cons.

Bromeliaceae A. L. de Jussieu, Gen. Pl. 49. 1789 (*'Bromeliae'*).
T.: *Bromelia* Linnaeus

Brunelliaceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 182. 1897.
T.: *Brunellia* Ruiz et Pavon

Bruniaceae R. Brown in Abel, Narr. Journ. China 374. 1818.
T.: *Brunia* Linnaeus

Brunoniaceae Lindley, Nat. Syst. 190. 1830.
T.: *Brunonia* J. E. Smith

Brunswigiaceae Horaninow, Prim. Lin. Syst. Nat. 51. 1834 (nom. illeg. vs. *Amaryllidaceae*, nom. cons prop.).
T.: *Brunsvigia* Heister

Bucklandiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 155. 1858 (*'Bucklandieae'*).
T.: *Exbucklandia* R. W. Brown (syn. *Bucklandia* Griffith, non Presl, nec *Brongniart*, homonyma).

Buddleiaceae Bartling, Ord. Nat. Pl. 172. 1830.
T.: *Buddleia* Linnaeus

Buglossaceae Hoffmansegg et Link, Fl. Port. 1: 163. 1809 (*'Buglossinae'*).
T.: *Anchusa* Linnaeus (syn. *Buglossum* Adanson)

Bulbocodeae Salisbury, Gen. Pl. (ed. J. E. Gray) 52. 1866 (nom. illeg vs. *Colchicaceae*).
T.: *Bulbocodium* Linnaeus

Burmanniaceae Blume, Enum. Pl. Javae 27. 1827.
T.: *Burmannia* Linnaeus

Burseraceae Kunth, Ann. Sc. Nat. 2: 346. 1824 (nom. cons. prop. vs. *Amyridaceae*).
T.: *Bursera* Linnaeus, nom. cons.

Butomaceae L. C. Richard, Mém. Mus. Hist. Nat. Paris 1: 366. 1815 (*'Butomeae'*).
T.: *Butomus* Linnaeus

Buttneriaceae vide *Byttneriaceae*.

Buxaceae Loiseleur, Man. Pl. Us. Indig. 2: 495. 1819.
T.: *Buxus* Linnaeus

Byblidaceae Domin, Act. Bot. Bohem. 1: 3. 1922.
T.: *Byblis* Salisbury

Byttneriaceae R. Brown in Flinders, Voy. Terra Austr. 2: 540. 1814 (*'Buttneriaceae'*).
T.: *Byttneria* Loefling, nom. cons.

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Cabombaceae A. Richard, Nouv. Élém. Bot. ed. 4. 420. 1828 (*'Cabombeae'*; nom. cons. prop. vs. *Hydropeltidaceae*).
T.: *Cabomba* Aublet
Cactaceae A. L. de Jussieu, Gen. Pl. 310. 1789 (*'Cacti'*).
T.: *Mammillaria* Haworth, nom. cons. vs. *Cactus* Linnaeus, nom. rej.
Caesalpiniaceae R. Brown in Flinders, Voy. Terra Austr. 2: 551. 1814 (*'Caesalpineae'*).
T.: *Caesalpinia* Linnaeus
Caladeae Salisbury, Gen. Pl. (ed. J. E. Gray) 5. 1866 (nom. illeg. vs. *Araceae*).
T.: *Caladium* Ventenat
Calectasiaceae Endlicher, Gen. Pl. 132. 1836 (*'Calectasieae'*).
T.: *Calectasia* R. Brown
Calendulaceae Link, Handb. 1: 776. 1829.
T.: *Calendula* Linnaeus
Callaceae Bartling, Ord. Nat. Pl. 66. 1830 (nom. illeg. vs. *Araceae*).
T.: *Calla* Linnaeus
Callicomaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 146. 1858 (*'Callicomeae'*).
T.: *Callicoma* Andrews
Callitrichaceae Link, Enum. Pl. Berol. 1: 7. 1821 (*'Callitrichinae'*).
T.: *Callitriche* Linnaeus
Calochortaceae Dumortier, Anal. Fam. Pl. 53. 1829 (err. orth. *'Calocorthineae'*).
T.: *Calochortus* Pursh
Calophyllaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 121. 1858 (*'Calophylleae'*).
T.: *Calophyllum* Linnaeus
Calycanthaceae Lindley, Bot. Reg. 5: *t. 404.* 1810 (*'Calycantheae'*).
T.: *Calycanthus* Linnaeus, nom. cons.
Calycanthemae Ventenat, Tabl. Regne Vég. 3: 298. 1799 (nom. illeg. ≡ *Lythraceae*, nom. cons. prop.).
T.: *Lythrum* Linnaeus
Calyceraceae R. Brown, Trans. Linn. Soc. London 12: 132. 1817 (*'Calycereae'*; nom. cons. prop. vs. *Boopideae*).
T.: *Calycera* Cavanilles
Cambogiaceae Horaninow, Prim. Lin. Syst. Nat. 98. 1834 (nom. illeg. vs. *Guttiferae* vel *Clusiaceae*).
T.: *Garcinia* Linnaeus (syn. *Cambogia* Linnaeus).
Camelliaceae Dumortier, Anal. Fam. Pl. 43. 1829.
T.: *Camellia* Linnaeus
Campanulaceae A. L. de Jussieu, Gen. Pl. 163. 1789.
T.: *Campanula* Linnaeus
Campynemataceae Dumortier, Anal. Fam. Pl. 57. 1829 (*'Campynemaceae'*).
T.: *Campynema* Labillardière
Candolleaceae Schoenland in Engler et Prantl, Nat. Pflanzenfam. 4(5): 79. 1889 (nom. illeg. ≡ *Stylidiaceae*).
T.: *Stylidium* Swartz, nom. cons. vs. *Candollea* Labillardière, nom. rej.
Canellaceae Martius, Nov. Gen. et Sp. 3: 170. 1829.
T.: *Canella* P. Browne, nom. cons.
Cannabinaceae Endlicher, Gen. Pl. 286. 1837 (*'Cannabineae'*).
T.: *Cannabis* Linnaeus
Cannaceae A. L. de Jussieu, Gen. Pl. 62. 1789 (*'Cannae'*).
T.: *Canna* Linnaeus
Canopaceae L. Pfeiffer, Syn. Bot. 137. 1870 (nomen).
T.: *Canopus* Presl (syn. tax. *Exocarpus* Labillardière)
Cansjeraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 238. 1858 (*'Cansiereae'*).
T.: *Cansjera* A. L. de Jussieu, nom. cons.
Capparidaceae A. L. de Jussieu, Gen. Pl. 242. 1789 (*'Capparides'*).
T.: *Capparis* Linnaeus
Caprifoliaceae A. L. de Jussieu, Gen. Pl. 210. 1789 (*'Caprifolia'*).
T.: *Lonicera* Linnaeus
Capusiaceae Gagnepain, Bull. Soc. Bot. France 87: 272. 1941 (nom. rej. prop. vs. *Siphonodontaceae*).
T.: *Siphonodon* Griffith (syn. *Capusia* Lecomte)
Cardamindeae Link, Handb. 2: 326. 1831 (nom. illeg. syn. *Tropaeolaceae*).
T.: *Tropaeolum* Linnaeus (syn. *Cardamindum* Adanson)
Cardiopteridaceae Blume, Rumphia 3: 205. *t. 177.* 1847 (*'Cardiopterideae'*).
T.: *Peripterygium* Hasskarl (syn. *Cardiopteris* Blume, nom. illeg.)
Carduaceae Rydberg, N. Amer. Fl. 33(1): 45. 1922.
T.: *Carduus* Linnaeus
Caricaceae Dumortier, Anal. Fam. Pl. 36. 1829 (nom. cons. prop. vs. *Papayaceae*).
T.: *Carica* Linnaeus
Carpodetaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 315. 1858 (*'Carpodeteae'*).
T.: *Carpodetus* J. R. et G. Forster

Cartonemataceae Pichon, Not. Syst. 12: 219. 1946.
T.: *Cartonema* R. Brown

Caryocaraceae Szyszylowicz in Engler et Prantl, Nat. Pflanzenfam. 3(6): 153. 1893 (nom. cons. prop. vs. *Rhizobolaceae*).
T.: *Caryocar* Linnaeus

Caryophyllaceae A. L. de Jussieu, Gen. Pl. 299. 1789 ('*Caryophylleae*').
T.: *Dianthus* Linnaeus

Cassiaceae Link, Handb. 2: 135. 1831.
T.: *Cassia* Linnaeus

Cassiniaceae C. H. Schultz, Flora 35: 129. 1852 (nom. illeg. vs. *Compositae* et *Asteraceae*).
T.: *Cassinia* R. Brown, nom. cons., non Aiton f.

Cassipoureaceae J. G. Agardh, Theoria Syst. Pl. 246. 1858 ('*Cassipoureae*').
T.: *Cassipourea* Aublet

Cassuvieae R. Brown in Tuckey, Narr. Exped. Congo 431. 1818 (nom. rej. prop. vs. *Anacardiaceae*).
T.: *Anacardium* Linnaeus (syn. *Cassuvium* Lamarck)

Cassythaceae Lindley, Nixus Pl. 15. 1833 ('*Cassytheae*').
T.: *Cassytha* Linnaeus

Castaneaceae Link, Enum. Pl. Berol. 1: 354. 1821 (nomen tantum).
T.: *Aesculus* Linnaeus

Castelaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 181. 1858 ('*Casteleae*').
T.: *Castela* Turpin, nom. cons. vs. *Castelia* Cavanilles, nom. rej.

Casuarineae Mirbel, Ann. Mus. Hist. Nat. Paris 16: 451.1810 (nom. rej. prop. vs. *Myricaceae*).
T.: *Casuarina* Linnaeus

Cathedraceae van Tieghem, Bull. Soc. Bot. France 43: 565. 1896.
T.: *Cathedra* Miers (syn. *Diplocrater* Bentham, non J. D. Hooker)

Cedrelaceae R. Brown in Flinders, Voy. Terr. Austr. 2: 595. 1814 ('*Cedreleae*').
T.: *Cedrela* Linnaeus

Celastraceae R. Brown in Flinders, Voy. Terra Austr. 2: 554. 1814 ('*Celastrineae*'; nom. cons. prop. vs. *Hippocrateaceae*).
T.: *Celastrus* Linnaeus

Celtidaceae Link, Handb. 2: 441. 1831 ('*Celtideae*').
T.: *Celtis* Linnaeus

Centrolepidaceae Desvaux, Ann. Sc. Nat. 13: 41. 1828 ('*Centrolepideae*').
T.: *Centrolepis* Labillardière

Cepaeeae Salisbury, Gen. Pl. (ed. J. E. Gray) 88. 1866 (nom. illeg. vs. *Alliaceae*).
T.: *Allium* Linnaeus syn. (*Cepa* Salisbury, non *Cepaea* Fourrier)

Cephalotaceae Dumortier, Anal. Fam. Pl. 59. 1829 ('*Cephaloteae*').
T.: *Cephalotus* Labillardière

Ceratoniaceae Link, Handb. 2: 135. 1831 ('*Ceratonieae*').
T.: *Ceratonia* Linnaeus

Ceratophyllaceae S. F. Gray, Arr. Brit. Pl. 2: 395, 554. 1821 ('*Ceratophyllae*').
T.: *Ceratophyllum* Linnaeus

Cercidiphyllaceae van Tieghem, Journ. de Bot. 14: 274. 1900.
T.: *Cercidiphyllum* Sieber et Zuccarini

Cercocarpaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 287. 1858 ('*Cercocarpeae*').
T.: *Cercocarpus* Kunth

Cercodianae A. de Jussieu, Dict. Sc. Nat. 7: 441. 1817 (nom. illeg. syn. *Haloragidaceae*).
T.: *Haloragis* J. R. et G. Forster (syn. *Cercodia* Murray)

Cestraceae Martius, Consp. Regni Veg. 22. 1835 ('*Cestrinae*').
T.: *Cestrum* Linnaeus

Cevalliaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 373. 1858 ('*Cevallieae*').
T.: *Cevallia* Lagasca

Chailletiaceae R. Brown in Tuckey, Narr. Exped. Congo 442. 1818 ('*Chailleteae*').
T.: *Dichapetalum* Thouars (syn. *Chailletia* De Candolle)

Chaunochitaceae van Tieghem, Bull. Soc. Bot. France 43: 565. 1896.
T.: *Chaunochiton* Bentham

Chelonaceae D. Don, Edinburgh New Phil. Journ. 19: 113. 1835 ('*Cheloneae*').
T.: *Chelone* Linnaeus

Chenopodiaceae Ventenat, Tabl. Regne Vég. 2: 253. 1799 ('*Chenopodeae*'; nom. cons. prop. vs. *Atriplicaceae*).
T.: *Chenopodium* Linnaeus

Chingithamnaceae Handel-Mazzetti, Sinensia 2: 126. *cum. fig.* 1932.
T.: *Chingithamnus* Handel-Mazzetti

Chironiaceae Horaninow, Char. Ess. Fam. Regni Veg. 111. 1847 (nom. illeg. vs. *Gentianaceae*).
T.: *Chironia* Linnaeus

Chlaenaceae Thouars, Hist. Veg. Iles Austr.-Afr. 46. 1807 (nom. illeg. ≡ *Rhodolaenaceae*).
T.: *Rhodolaena* Thouars

Chloanthaceae J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Chloanthes* R. Brown

Chloranthaceae Blume, Enum. Pl. Javae 78. 1827.
T.: *Chloranthus* Swartz

Chrysobalanaceae R. Brown in Tuckey, Narr. Exped. Congo 433. 1818 (*'Chrysobalaneae'*).
T.: *Chrysobalanus* Linnaeus

Cichoriaceae A. L. de Jussieu, Gen. Pl. 168. 1789 (*'Cichoraceae'*).
T.: *Cichorium* Linnaeus

Cinarocephalae A. L. de Jussieu, Gen. Pl. 171. 1789 (nom. illeg. ≡ *Cynaraceae*).
T.: *Cynara* Linnaeus

Cinchonaceae Lindley, Nat. Syst. 203. 1830.
T.: *Cinchona* Linnaeus

Circaeaceae Lindley, Nat. Syst. 57. 1830.
T.: *Circaea* Linnaeus

Circaeasteraceae J. Hutchinson, Fam. Fl. Pl. 1: 98. *f.* 20. 1926.
T.: *Circaeaster* Maximowicsz

Cissaceae Horaninow, Char. Ess. Fam. Regni Veg. 184. 1847 (nom. illeg. vs. *Vitaceae*).
T.: *Cissus* Linnaeus

Cistaceae A. L. de Jussieu, Gen. Pl. 294. 1789 (*'Cisti'*).
T.: *Cistus* Linnaeus

Citraceae Drude in Schenk, Handb. Bot. 3(2): 391. 1887 (nom. illeg. vs. *Aurantiaceae*).

Cleomaceae Horaninow, Prim. Lin. Syst. Nat. 92. 1834 (nom. illeg. vs. *Capparidaceae*).
T.: *Cleome* Linnaeus

Clethraceae Klotzsch, Linnaea 24: 12. 1851.
T.: *Clethra* Linnaeus

Cliffortiaceae Martius, Consp. Regni Veg. 47. 1835 (nomen).
T.: *Cliffortia* Linnaeus

Clusiaceae Lindley, Nat. Syst. ed. 2. 74. 1836 (nom. alt. prop. Lindley vs. *Guttiferae;* nom. cons. prop. vs. *Symphoniaceae*).
T.: *Clusia* Linnaeus

Cneoraceae Link, Handb. 2: 440. 1831 (*'Cneoreae'*).
T.: *Cneorum* Linnaeus

Cobaeaceae D. Don, Edinburgh Phil. Journ. 10: 111. 1824.
T.: *Cobaea* Cavanilles (nom. cons. prop.)

Cochlospermaceae Planchon in Hooker, London Journ. Bot. 6: 305. 1847.
T.: *Cochlospermum* Kunth, nom. cons.

Cocosaceae C. H. Schultz, Nat. Syst. Pflanzenr. 316. 1832 (*'Cocoineae'*).
T.: *Cocos* Linnaeus

Coffeaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 304. 1858.
T.: *Coffea* Linnaeus

Colchicaceae Lamarck et A. P. De Candolle, Fl. Franç. ed. 3. 3: 192. 1805.
T.: *Colchicum* Linnaeus

Coleochloaceae Nelmes, Kew Bull. 1958: ined.
T.: *Coleochloa* Gilly

Coleogynaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 171. 1858 (*'Coleogyneae'*).
T.: *Coleogyne* Torrey

Columelliaceae D. Don, Edinburgh New Phil. Journ. 6: 46. 1829 (*'Columellieae'*).
T.: *Columellia* Ruiz et Pavon, non *Columella* Loureiro, nom. rej.

Combretaceae R. Brown, Prodr. 1: 351. 1810 (nom. cons. prop. vs. *Myrobalanaceae* et *Terminaliaceae*).
T.: *Combretum* Linnaeus, nom. cons.

Commelinaceae R. Brown, Prodr. 1: 268. 1810 (*'Commelineae'*).
T.: *Commelina* Linnaeus

Compositae Gaertner, Fruct. 2: 353. 1791 (*'Compositiflorae'*; nom. cons. alt. cum *Asteraceae*).
T.: *Aster* Linnaeus

Compsoaceae Horaninow, Prim. Lin. Syst. Nat. 51. 1834 (nom. alt. illeg. vs. *Hypoxidaceae*).
T.: *Tricyrtis* Wallich, nom. cons. vs. *Compsoa* D. Don, nom. rej.

Connaraceae R. Brown in Tuckey, Narr. Exped. Congo 431. 1818.
T.: *Connarus* Linnaeus

Convallariaceae Horaninow, Prim. Lin. Syst. Nat. 53. 1834 (nom. illeg. vs. *Smilacaceae* etc.).
T.: *Convallaria* Linnaeus

Convolvulaceae A. L. de Jussieu, Gen. Pl. 132. 1789 (*'Convolvuli'*).
T.: *Convolvulus* Linnaeus

Cordiaceae Link, Handb. 1: 569. 1829 (nom. cons. prop. vs. *Sebestenaceae*).
T.: *Cordia* Linnaeus

Coreopsidaceae Link, Handb. 1: 768. 1829 (*'Coreopsideae'*).
T.: *Coreopsis* Linnaeus

Coriariaceae De Candolle, Prodr. 1: 739. 1824 (*'Coriarieae'*).
T.: *Coriaria* Linnaeus

Coridaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 332. 1858 (*'Corideae'*).
T.: *Coris* Linnaeus

Corispermaceae Link, Handb. 2: 407. 1831 (*'Corispermeae'*).
T.: *Corispermum* Linnaeus

Cornaceae Dumortier, Anal. Fam. Pl. 33. 1829 (*'Corneae'*); Link, Handb. 2: 2. 1831.
T.: *Cornus* Linnaeus

Correaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 229. 1858.
T.: *Correa* J. E. Smith (*'Corraea'*), nom. cons. vs. *Correia* Vellozo, nom. rej.

Corrigiolaceae Dumortier, Anal. Fam. Pl. 44. 1829.
T.: *Corrigiola* Linnaeus

Corsiaceae Beccari, Malesia 1: 238. *t.* 9. 1878.
T.: *Corsia* Beccari

Corylaceae Mirbel, Élém. Phys. Vég. Bot. 2: 906. 1815.
T.: *Corylus* Linnaeus

Corymbiferae A. L. de Jussieu, Gen. Pl. 177. 1789 (nom. illeg. ≡ *Compositae* et *Asteraceae*).
T.: *Aster* Linnaeus

Corynocarpaceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 215. 1897.
T.: *Corynocarpus* J. R. et G. Forster

Coryphaceae C. H. Schultz, Nat. Syst. Pflanzenr. 317. 1832.
T.: *Corypha* Linnaeus

Costaceae Nakai, Journ. Jap. Bot. 17: 203. 1941.
T.: *Costus* Linnaeus

Coulaceae van Tieghem, Bull. Mus. Hist. Nat. Paris 1: 168. 1895.
T.: *Coula* Baillon

Crassulaceae De Candolle, Bull. Soc. Philom. no. 49: 1. 1801 (nom. cons. prop. vs. *Sempervivaceae*).
T.: *Crassula* Linnaeus

Crescentiaceae Dumortier, Anal. Fam. Pl. 20. 1829.
T.: *Crescentia* Linnaeus

Croomiaceae Nakai, Ic. Pl. As. Or. 2: 159. *t.* 60. 1937 (syn. tax. *Roxburghiaceae*?).
T.: *Croomia* Torrey

Crossosomataceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 185. 1897.
T.: *Crossosoma* Nuttall

Crotonaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 258. 1858 (*'Crotoneae'*).
T.: *Croton* Linnaeus

Cruciferae A. L. de Jussieu, Gen. Pl. 237. 1789 (nom. cons. alt. cum *Brassicaceae*).
T.: *Brassica* Linnaeus

Crypteroniaceae A. De Candolle, Prodr. 16(2): 677. 1868 (nom. illeg. vs. *Henslowiaceae*).
T.: *Crypteronia* Blume

Cryptocorynaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 32. 1858 (*'Cryptocoryneae'*).
T.: *Cryptocoryne* Wydler

Ctenolophonaceae Exell et Mendonça, Consp. Fl. Angol. 1: 248, 392. 1951.
T.: *Ctenolophon* Oliver

Cucurbitaceae A. L. de Jussieu, Gen. Pl. 393. 1789.
T.: *Cucurbita* Linnaeus

Cunoniaceae R. Brown in Flinders, Voy. Terra Austr. 2: 548. 1814.
T.: *Cunonia* Linnaeus

Cupuliferae A. Richard, Nouv. Élém. Bot. ed. 4. 563. 1828 (nom. illeg.; fam. heterogen. incl. *Fagaceae, Corylaceae* etc.).

Curcumaceae Dumortier, Anal. Fam. Pl. 56. 1829 (nom. illeg., syn. *Zingiberaceae*).
T.: *Curcuma* Linnaeus

Cuscutaceae Dumortier, Anal. Fam. Pl. 20. 1829.
T.: *Cuscuta* Linnaeus

Cuspariaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 220. 1858 (*'Cusparieae'*).
T.: *Cusparia* Humboldt

Cyananthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 384. 1858 (*'Cyanantheae'*).
T.: *Cyananthus* Royle

Cyanastraceae Engler in Engler [et Prantl], Nat. Pflanzenfam. ed. 2. 15A: 188. 1930 (nom. illeg. vs. *Tecophilaeaceae*).
T.: *Cyanastrum* Oliver, non Cassini

Cyanelleae Salisbury, Gen. Pl. (ed. J. E. Gray) 46. 1866 (nom. illeg. vs. *Tecophilaeaceae*).
T.: *Cyanella* Linnaeus

Cyclanthaceae Poiteau, Mém. Mus. Hist. Nat. Paris 9: 35. 1822 (*'Cyclantheae'*).
T.: *Cyclanthus* Poiteau

Cymbantheae Salisbury, Gen. Pl. (ed. J. E. Gray) 54. 1866 (nom. illeg. vs. *Melanthiaceae*).
T.: *Androcymbium* Willdenow (syn. *Cymbanthes* Salisbury)

Cymodociaceae N. Taylor, N. Amer. Fl. 17(1): 31. 1909.
T.: *Cymodocia* C. Koenig (*'Cymodocea'*), nom. cons.

Cynaraceae Lindley, Nat. Syst. ed. 2. 251. 1836 (nom. nov. vs. *Cinarocephalae* A. L. de Jussieu, 1789, nom. illeg.).
T.: *Cynara* Linnaeus

Cynocrambaceae Nees, Gen. Pl. Fl. Germ. fasc. 8, no. 1. 1835 (nom. illeg., syn. *Theligonaceae*).
T.: *Theligonum* Linnaeus (syn. *Cynocrambe* Adanson, nom. illeg.)

Cynomoriaceae Lindley, Nixus Pl. 23. 1833 (‘*Cynomorieae*’).
T.: *Cynomorium* Linnaeus
Cyperaceae A. L. de Jussieu, Gen. Pl. 26. 1789 (‘*Cyperoideae*’).
T.: *Cyperus* Linnaeus
Cypripediaceae Lindley, Nixus Pl. 22. 1833 (‘*Cypripedieae*’).
T.: *Cypripedium* Linnaeus
Cyrillaceae Endlicher, Gen. Pl. Suppl. 1: 1413. 1839 (‘*Cyrilleae*’).
T.: *Cyrilla* Linnaeus
Cyrtandraceae Jack, Trans. Linn. Soc. London 14: 23. 1823 (nom. rej. prop. vs. *Gesneriaceae*).
T.: *Cyrtandra* J. R. et G. Forster
Cyrtanthaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 138. 1866 (‘*Cyrtantheae*’).
T.: *Cyrtanthus* Aiton
Cytinaceae Brongniart, Ann. Sc. Nat. 1: 39. 1824 (‘*Cytineae*’).
T.: *Cytinus* Linnaeus, nom. cons.

D

Damasoniaceae Nakai, Ord. Fam. etc. App. 213. 1943.
T.: *Damasonium* Torrey
Daphnoideae Ventenat, Tabl. Regne Vég. 2: 235. 1799 (nom. illeg. ≡ *Thymelaeaceae*).
T.: *Thymelaea* Endlicher (nom. cons.; *Daphne* Linnaeus, p.p.)
Daphniphyllaceae Mueller Argau in De Candolle, Prodr. 16(1): 1. 1869.
T.: *Daphniphyllum* Blume
Dasypogonaceae Dumortier, Anal. Fam. Pl. 55. 1829 (‘*Dasypogoneae*’).
T.: *Dasypogon* R. Brown
Datiscaceae R. Brown in Denham et Clapperton, Trav. N. and Central Afr. 230. 1826 (‘*Datisceae*’).
T.: *Datisca* Linnaeus
Daucaceae Dostál, Květena Čsr. 1016. 1949 (nom. illeg. vs. *Ammiaceae*).
T.: *Daucus* Linnaeus
Davidiaceae Li, Lloydia 17: 330. 1955.
T.: *Davidia* Baillon
Davidsoniaceae Bange, Blumea 7: 294. 1952.
T.: *Davidsonia* F. Mueller
Deeringiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 369. 1858 (‘*Deeringieae*’).
T.: *Deeringia* R. Brown
Degeneriaceae I. W. Bailey et A. C. Smith, Journ. Arnold Arb. 23(3): 357. *t. 1-5.* 1942.
T.: *Degeneria* I. W. Bailey et A. C. Smith
Dendrophthoaceae van Tieghem, Bull. Soc. Bot. France 44: 105. 1897.
T.: *Dendrophthoe* Martius
Desfontaineaceae Endlicher, Gen. Pl. 669. 1839 (‘*Desfontaineae*’).
T.: *Desfontainea* Ruiz et Pavon
Detariaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 230. 1858 (‘*Detarieae*’).
T.: *Detarium* Jussieu
Devauxiaceae Dumortier, Anal. Fam. Pl. 62. 1829 (nom. illeg. ≡ *Centrolepidaceae*).
T.: *Centrolepis* Labillardière (syn. *Devauxia* R. Brown)
Dialypetalanthaceae Rizzini et Achioni, Lilloa 17: 253. *t. 1-17.* 1949.
T.: *Dialypetalanthus* Kuhlmann
Dianelleae Salisbury, Gen. Pl. (ed. J. E. Gray) 67. 1866 (nom. illeg. vs. *Xanthorrhoeaceae*).
T.: *Dianella* Lamarck
Dianthaceae Drude in A. Schenk, Handb. Bot. 3(2): 395. 1887 (nom. illeg. vs. *Caryophyllaceae, Silenaceae* et *Alsinaceae*).
T.: *Dianthus* Linnaeus
Diapensiaceae Lindley, Nat. Syst. ed. 2. 233. 1836.
T.: *Diapensia* Linnaeus
Dichapetaleae Baillon in Martius, Fl. Bras. 12(1): 365. 1886 (nom. illeg. vs. *Chailletiaceae*).
T.: *Dichapetalum* Thouars
Dichondraceae Dumortier, Anal. Fam. Pl. 20. 1829.
T.: *Dichondra* J. R. et G. Forster
Diclidantheraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 195. 1858 (‘*Diclidanthereae*’).
T.: *Diclidanthera* Martius
Dictamnaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 227. 1858 (‘*Dictamneae*’).
T.: *Dictamnus* Linnaeus
Didiereaceae Radlkofer in Engler et Prantl, Nat. Pflanzenfam. 3(5): 462. 1896 (‘*Didiereae*’).
T.: *Didierea* Baillon
Didymelaceae Leandri, Ann. Sc. Nat. ser. 10. 19: 316. 1937.
T.: *Didymeles* Thouars
Didymocarpeae D. Don, Edinburgh Phil. Journ. 7: 83. 1822 (nom. rej. prop. vs. *Gesneriaceae*).
T.: *Didymocarpus* Wallich, nom. cons.
Digitalidaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 381. 1858 (‘*Digitaleae*’).
T.: *Digitalis* Linnaeus

Dilleniaceae Salisbury in W. Hooker, Parad. Lond. 2(1): *t.* 73. 1807.
T.: *Dillenia* Linnaeus

Dioncophyllaceae Airy Shaw, Kew Bull. 1951: 333, *cum. fig.* 1952.
T.: *Dioncophyllum* Baillon

Dioscoreaceae R. Brown, Prodr. 1: 294. 1810 ('*Dioscoreae*').
T.: *Dioscorea* Linnaeus

Diosmeae R. Brown in Flinders, Voy. Terra Austr. 2: 545. 1814 (nom. illeg. vs. *Rutaceae*).
T.: *Diosma* Linnaeus

Dipentodontaceae Merrill, Brittonia 4: 73. *f.* 2. 1941 ('*Dipentodonaceae*').
T.: *Dipentodon* Dunn

Diphylleiaceae C. H. Schultz, Nat. Syst. Pflanzenr. 328. 1832 (nom. illeg.; incl. *Podophyllaceae* et *Sarraceniaceae*).
T.: *Diphylleia* Michaux

Diplolaenaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 229. 1858 ('*Diplolaeneae*').
T.: *Diplolaena* R. Brown

Dipsacaceae A. L. de Jussieu, Gen. Pl. 194. 1789 ('*Dipsaceae*').
T.: *Dipsacus* Linnaeus

Dipteraceae Lindley, Nat. Syst. ed. 2. 98. 1836 (nom. illeg. ≡ *Dipterocarpaceae*).
T.: *Dipterocarpus* Gaertner

Dipterocarpaceae Blume, Bijdr. 1: 222. 1825 ('*Dipterocarpeae*').
T.: *Dipterocarpus* Gaertner

Dirachmaceae J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Dirachma* I. B. Balfour

Disanthaceae Nakai, Ord. Fam. etc. App. 246. 1943.
T.: *Disanthus* Maximowicz

Dodonaeaceae Link, Handb. 2: 441. 1831.
T.: *Dodonaea* Linnaeus

Dombeyaceae C. H. Schultz, Nat. Syst. Pflanzenr. 472. 1832.
T.: *Dombeya* Cavanilles, nom. cons., non L'Héritier, nom. rej.

Donatiaceae J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Donatia* J. R. et G. Forster, nom. cons., non Loefling, nom. rej.

Dracaenaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 73. 1866 ('*Dracaeneae*').
T.: *Dracaena* Linnaeus

Draconteae Salisbury, Gen. Pl. (ed. J. E. Gray) 7. 1866 (nom. illeg. vs. *Acoraceae*).
T.: *Dracontium* Linnaeus

Drimeaceae van Tieghem, Journ. de Bot. 14: 275, 361. 1900 ('*Drimytaceae*').
T.: *Drimys* J. R. et G. Forster

Droseraceae Salisbury in W. Hooker, Parad. Lond. *t.* 95. 1808 ('*Drosereae*').
T.: *Drosera* Linnaeus

Drupaceae S. F. Gray, Arr. Brit. Pl. 2: 589. 1821 (nom. illeg.).
T.: *Prunus* Linnaeus

Dryadaceae S. F. Gray, Arr. Brit. Pl. 577. 1821 ('*Dryadeae*').
T.: *Dryas* Linnaeus

Drymyrrhizae Ventenat, Tabl. Regne Vég. 2: 202. 1799 (nom. illeg. ≡ *Zingiberaceae*).

Duckeodendraceae Kuhlmann, Arquiv. Serv. Florest. Rio de Janeiro 3(1): 7. 1950.
T.: *Duckeodendron* Kuhlmann

Dulongiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 315. 1858 ('*Dulongieae*').
T.: *Phyllonoma* Willdenow (syn. *Dulongia* Kunth)

Durantaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 295. 1858.
T.: *Duranta* Linnaeus

Dysphaniaceae Pax et K. Hoffmann in Engler [et Prantl], Nat. Pflanzenfam. ed. 2. 16C: 273. *f.* 119. 1934.
T.: *Dysphania* R. Brown

E

Ebenaceae Ventenat, Tabl. Regne Vég. 2: 443. 1799 (nom. cons. prop. vs. *Guaiacanaceae*).
T.: *Ebenus* Linnaeus

Echinopsidaceae Link, Handb. 1: 814. 1829 ('*Echinopeae*').
T.: *Echinops* Linnaeus

Ehretiaceae Martius, Nov. Gen. et Sp. 2: 138. 1827.
T.: *Ehretia* Linnaeus

Elaeagnaceae A. L. de Jussieu, Gen. Pl. 74. 1789 ('*Elaeagni*').
T.: *Elaeagnus* Linnaeus

Elaeocarpaceae De Candolle, Prodr. 1: 519. 1824 ('*Elaeocarpeae*').
T.: *Elaeocarpus* Linnaeus

Elatinaceae Cambessèdes, Mém. Mus. Hist. Nat. Paris 18: 225. 1829 ('*Elatineae*').
T.: *Elatine* Linnaeus

Elismataceae Nakai, Ord. Fam. etc. App. 213. 1943.
T.: *Elisma* Buchenau

Elodeaceae Dumortier, Anal. Fam. Pl. 54. 1829.
T.: *Elodea* L. C. Richard

Elytranthaceae van Tieghem, Bull. Soc. Bot. France 43: 250. 1896.
T.: *Elytranthe* Blume

Embeliaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 140. 1858 (*'Embelieae'*).
T.: *Embelia* Burmann f., nom. cons.

Emmotaceae van Tieghem, Bull. Soc. Bot. France 44: 119. 1897.
T.: *Emmotum* Desvaux

Empetraceae S. F. Gray, Arr. Brit. Pl. 2: 732. 1821 (*'Empetrideae'*).
T.: *Empetrum* Linnaeus

Enhalaceae Nakai, Ord. Fam. etc. App. 210. 1943.
T.: *Enhalus* L. C. Richard

Epacridaceae R. Brown, Prodr. 535. 1810 (*'Epacrideae'*).
T.: *Epacris* Cavanilles, nom. cons. vs. *Epacris* J. R. et G. Forster, nom. rej.

Ephedraceae Dumortier, Anal. Fam. Pl. 11. 1829 (nom. rej. prop. vs. *Gnetaceae*).
T.: *Ephedra* Linnaeus

Epilobiaceae Ventenat, Tabl. Regne Vég. 3: 307. 1799 (*'Epilobianae'*; syn. *Onagraceae*).
T.: *Epilobium* Linnaeus

Eremosynaceae Dandy in J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Eremosyne* Endlicher

Ericaceae A. L. de Jussieu, Gen. Pl. 159. 1789 (*'Ericae'*).
T.: *Erica* Linnaeus

Eriocaulaceae Desvaux, Ann. Sc. Nat. 13: 45. 1828 (*'Eriocauloneae'*).
T.: *Eriocaulon* Linnaeus

Eriogonaceae Meisner, Pl. Vasc. Gen. 2: 229. 1836-43 (*'Eriogoneae'*).
T.: *Eriogonum* Michaux

Eriospermaceae Endlicher, Gen. Pl. 156. 1836 (*'Eriospermeae'*).
T.: *Eriospermum* Jacquin

Erodiaceae Horaninow, Char. Ess. Fam. Regni Veg. 192. 1847 (nom. illeg. vs. *Geraniaceae;* fam. heterogen. incl. *Oxalidaceae, Balsaminaceae, Ledocarpaceae, Vivianiaceae,* etc.).
T.: *Erodium* Linnaeus

Erycibaceae Endlicher, Gen. Pl. 655. 1839 (*'Erycibeae'*).
T.: *Erycibe* Roxburgh

Erythropalaceae van Tieghem, Bull. Soc. Bot. France 43: 564. 1896.
T.: *Erythropalum* Blume

Erythrospermaceae van Tieghem, Journ. de Bot. 14: 128. 1900.
T.: *Erythrospermum* Lamarck

Erythroxylaceae Kunth in Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 5: 175. 1822 (*'Erythroxyleae'*).
T.: *Erythroxylon* Linnaeus

Escalloniaceae R. Brown in Franklin, Narr. Journ. Polar Sea 766. 1823 (*'Escallonieae'*).
T.: *Escallonia* Linnaeus f.

Eucomidaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 16. 866 (*'Eucomeae'*).
T.: *Eucomis* L'Héritier, nom. cons.

Eucommiaceae van Tieghem, Journ. de Bot. 14: 274. 1900.
T.: *Eucommia* Oliver

Eucryphiaceae Endlicher, Ench. Bot. 528. 1841 (*'Eucrypheae'*).
T.: *Eucryphia* Cavanilles

Eupatoriaceae Link, Handb. 1: 729. 1829.
T.: *Eupatorium* Linnaeus

Euphorbiaceae A. L. de Jussieu, Gen. Pl. 384. 1789 (*'Euphorbiae'*).
T.: *Euphorbia* Linnaeus

Eupomatiaceae Endlicher, Gen. Pl. 835. 1839 (*'Eupomatieae'*).
T.: *Eupomatia* R. Brown

Eupteleaceae van Tieghem, Journ. de Bot. 14: 274. 1900.
T.: *Euptelea* Sieber et Zuccarini

Euryalaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 51. 1858 (*'Euryaleae'*). — Li, American Midl. Nat. 55: 40. 1955.
T.: *Euryale* Salisbury

F

Fabaceae H. G. L. Reichenbach, Consp. Regni Veg. 149. 1828 (nom. cons. prop.; nom. alt. vs. *Leguminosae* et *Papilionaceae*).
T.: *Vicia* Linnaeus

Fagaceae Dumortier, Anal. Fam. Pl. 11. 1829 (*'Fagineae'*).
T.: *Fagus* Linnaeus

Fevilleaceae L. Pfeiffer, Syn. Bot. 277. 1870 (nom. illeg. ≡ *Nhandirobaceae*).
T.: *Fevillea* Linnaeus

Ficaceae Dumortier, Anal. Fam. Pl. 15. 1829 (*'Ficineae'*).
T.: *Ficus* Linnaeus

Ficoidaceae A. L. de Jussieu, Gen. Pl. 315. 1789 (*'Ficoideae'*).
T.: *Aizoon* Linnaeus

Flacourtiaceae De Candolle, Prodr. 1: 255. 1824 (*'Flacourtianeae'*; nom. cons. prop. vs. *Samydaceae* et *Homaliaceae*).
T.: *Flacourtia* L'Héritier

Flagellariaceae Dumortier, Anal. Fam. Pl. 59. 1829.
T.: *Flagellaria* Linnaeus

Fluviales Ventenat, Tabl. Regne Vég. 2: 80. 1799 (nom. illeg. ≡ *Najadaceae*).
T.: *Najas* Linnaeus (syn. *Fluvialis* Adanson)

Fluviatiles S. F. Gray, Arr. Brit. Pl. 2: 31. 1821 (nom. illeg. ≡ *Najadaceae*).

Forestieraceae Endlicher, Gen. Pl. 288. 1837 ('*Forestiereae*').
T.: *Forestiera* Poiret

Fothergillaceae Link, Handb. 2: 445. 1831 ('*Fothergilleae*').
T.: *Fothergilla* Murray, non Aublet

Fouquieriaceae De Candolle, Prodr. 3: 349. 1828.
T.: *Fouquieria* Kunth

Fragariaceae Nestler, Monogr. Potent. 14. 1816 (nom. illeg. vs. *Rosaceae*).
T.: *Fragaria* Linnaeus

Francoaceae A. de Jussieu, Ann. Sc. Nat. 25: 9. 1832.
T.: *Francoa* Cavanilles

Frangulaceae Lamarck et De Candolle, Fl. Franç. ed. 3. 5: 619. 1805 (nom. illeg. vs. *Rhamnaceae*).
T.: *Frangula* Miller (syn. *Rhamnus* Linnaeus, p.p.)

Frankeniaceae S. F. Gray, Arr. Brit. Pl. 2: 663. 1821.
T.: *Frankenia* Linnaeus

Fraxinaceae S. F. Gray, Arr. Brit. Pl. 2: 395. 1821 ('*Fraxineae*').
T.: *Fraxinus* Linnaeus

Fraxinellae Nees et Martius, Verh. Leop.-Carol. Akad. Naturf. 11(2): 149. 1823 (nom. illeg.; syn. *Rutaceae*, saltem partim).

Fremontiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 264. 1858 ('*Fremontieae*').
T.: *Fremontodendron* Coville (syn. *Fremontia* Torrey, 1854, nom. illeg., non Torrey, 1845)

Fritillareae Salisbury, Gen. Pl. (ed. J. E. Gray) 56. 1866 (nom. illeg. vs. *Liliaceae*).
T.: *Fritillaria* Linnaeus

Fumariaceae De Candolle, Syst. Nat. 2: 105. 1821.
T.: *Fumaria* Linnaeus

Funkiaceae Horaninow, Prim. Lin. Syst. Nat. 52. 1834 (nom. illeg. vs. *Hemerocallidaceae* etc.; fam. heterogen.).

G

Galacineae D. Don, Edinburgh New Phil. Journ. 6: 53. 1828 (nom. illeg. vs. *Francoaceae*).
T.: *Galax* Linnaeus, nom. cons. sensu Nuttall

Galantheae Salisbury, Gen. Pl. (ed. J. E. Gray) 95. 1866 (nom. illeg. vs. *Leucojaceae*).
T.: *Galanthus* Linnaeus

Galeaceae Bubani, Fl. Pyren. 1: 49. 1897 (nom. illeg. vs. *Myricaceae*).
T.: *Myrica* Linnaeus

Galiaceae Lindley, Nat. Syst. ed. 2. 249. 1836 (nom. illeg. vs. *Rubiaceae*).
T.: *Galium* Linnaeus

Garciniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 123. 1858 ('*Garcinieae*').
T.: *Garcinia* Linnaeus

Gardeniaceae Dumortier, Anal. Fam. Pl. 29. 1829.
T.: *Gardenia* Ellis, nom. cons., non Colden, nom. rej.

Garryaceae Lindley, Bot. Reg. 20: *t. 1686*. 1834.
T.: *Garrya* Lindley

Geissolomataceae Sonder, Linnaea 23: 105. 1850 ('*Geissolomaceae*').
T.: *Geissoloma* Lindley

Gentianaceae A. L. de Jussieu, Gen. Pl. 141. 1789 ('*Gentianae*').
T.: *Gentiana* Linnaeus

Geosiridaceae Jonker, Rec. Trav. Bot. Neérland. 36: 477. 1939.
T.: *Geosiris* Baillon

Geraniaceae A. L. de Jussieu, Gen. Pl. 268. 1789 ('*Gerania*').
T.: *Geranium* Linnaeus

Gesneriaceae C. G. Nees, Ann. Sc. Nat. 6: 290. 1825 ('*Gesnerieae*'; nom. cons. prop. vs. *Didymocarpaceae* et *Cyrtandraceae*).
T.: *Gesneria* Linnaeus

Gethyllidaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 6. 1858 ('*Gethyllideae*').
T.: *Gethyllis* Linnaeus

Gilliesiaceae Lindley, Bot. Reg. 12: *t. 992*. 1826 ('*Gilliesieae*').
T.: *Gilliesia* Lindley

Ginalloaceae van Tieghem, Bull. Soc. Bot. France 44: 105. 1897.
T.: *Ginalloa* Korthals

Ginkgoaceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 19. 1897 (nom. cons. prop. vs. *Salisburiaceae*).
T.: *Ginkgo* Linnaeus

Gisekiaceae Nakai, Journ. Jap. Bot. 18: 102. 1942.
T.: *Gisekia* Linnaeus

Gladiolaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 141. 1866 ('*Gladioleae*').
T.: *Gladiolus* Linnaeus

Glinaceae Link, Handb. 2: 481. 1831 ('*Glinoideae*').
T.: *Glinus* Linnaeus

Globulariaceae Lamarck et De Candolle, Fl. Franç. ed. 3. 3: 427. 1805 ('*Globulariae*').
T.: *Globularia* Linnaeus

Glyptospermae Ventenat, Tabl. Regne Vég. 3: 75. 1799 (nom. illeg. ≡ *Annonaceae*).
T.: *Annona* Linnaeus

Gnetaceae Blume, Ann. Sc. Nat. ser. 2. 2: 101. 1834 (*'Gneteae'*; nom. cons. prop. vs. *Ephedraceae*).
T.: *Gnetum* Linnaeus

Gomortegaceae Reiche, Ber. Deutsch. Bot. Ges. 14: 232. *t. 16.* 1896.
T.: *Gomortega* Ruiz et Pavon

Gonystylaceae van Tieghem, Ann. Sc. Nat. ser. 7. 17: 248. 1893 (*'Gonystyleae'*).
T.: *Gonystylus* Teijsmann et Binn

Goodeniaceae R. Brown, Prodr. 573. 1810 (*'Goodenoviae'*).
T.: *Goodenia* J. E. Smith

Goupiaceae Miers, Contrib. Bot. 2: 134. *t. 74.* 1860-69.
T.: *Goupia* Aublet

Graminaceae Lindley, Nat. Syst. ed. 2. 369. 1836 (nom. illeg. ≡ *Gramineae* vel *Poaceae*).
T.: *Poa* Linnaeus

Gramineae A. L. de Jussieu, Gen. Pl. 28. 1789 (nom. cons. alt. cum *Poaceae*).
T.: *Poa* Linnaeus

Granateae D. Don, Edinburgh New Phil. Journ. 1: 134. 1826 (nom. illeg. ≡ *Punicaceae*).
T.: *Punica* Linnaeus

Greyiaceae J. Hutchinson, Fam. Fl. Pl. 1: 202. *f. 140.* 1926.
T.: *Greyia* W. J. Hooker et Harvey

Gronoviaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 373. 1858 (*'Gronovieae'*).
T.: *Gronovia* Linnaeus

Grossulariaceae Lamarck et De Candolle, Fl. Franç. 3. 5: 405. 1805 (*'Grossulariae'*).
T.: *Ribes* Linnaeus

Grubbiaceae Endlicher, Gen. Pl. 327. 1838.
T.: *Grubbia* Bergius

Guaiacanae A. L. de Jussieu, Gen. Pl. 155. 1789 (nom. rej. prop. vs. *Ebenaceae*).
T.: *Guaiacanum* Linnaeus

Gunneraceae Endlicher, Gen. Pl. 285. 1837.
T.: *Gunnera* Linnaeus

Guttiferae A. L. de Jussieu, Gen. Pl. 255. 1789 (nom. cons. alt. cum *Clusiaceae*, nom. cons. prop.).
T.: *Clusia* Linnaeus

Gyrocarpaceae Dumortier, Anal. Fam. Pl. 13. 1829 (*'Gyrocarpeae'*).
T.: *Gyrocarpus* Jacquin

Gyrostemonaceae Endlicher, Ench. Pl. 509. 1841 (*'Gyrostemoneae'*).
T.: *Gyrostemon* Desfontaines

H

Hachetteaceae van Tieghem, Journ. de Bot. 12: 364. 1898 (in clavi).
T.: *Hachettea* Baillon

Haemanthaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 129. 1866 (*'Haemantheae'*).
T.: *Haemanthus* Linnaeus

Haemodoraceae R. Brown, Prodr. 1: 299. 1810.
T.: *Haemodorum* J. E. Smith

Halesiaceae Link, Handb. 1: 667. 1829.
T.: *Halesia* Linnaeus, nom. cons., non P. Browne, nom. rej.

Halophilaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 50. 1858 (*'Halophileae'*).
T.: *Halophila* Thouars

Halophytaceae Soriano, Not. Mus. La Plata Bot. 11: 162. 1946.
T.: *Halophytum* Spegazzini

Haloragidaceae R. Brown in Flinders, Voy. Terr. Austr. 2: 549. 1814 (*'Haloragageae'*).
T.: *Haloragis* J. R. et G. Forster

Hamamelidaceae R. Brown in Abel, Narr. Journ. China 374. 1818.
T.: *Hamamelis* Linnaeus

Harmandiaceae van Tieghem, Bull. Soc. Bot. France 43: 569. 1896.
T.: *Harmandia* Baillon

Hebenstreitiaceae Horaninow, Prim. Lin. Syst. Nat. 76. 1834 (nom. illeg. vs. *Selaginaceae*).
T.: *Hebenstreitia* Linnaeus

Hederaceae Bartling, Ord. Nat. Pl. 238. 1830.
T.: *Hedera* Linnaeus

Hedysaraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 207. 1858 (*'Hedysareae'*).
T.: *Hedysarum* Linnaeus

Heisteriaceae van Tieghem, Bull. Soc. Bot. France 43: 564. 1896.
T.: *Heisteria* Jacquin

Helichrysaceae Link, Handb. 1: 712. 1829 (*Elichryseae*).
T.: *Helichrysum* Miller, nom. cons. vs. *Elychrysum* Miller, nom. rej.

Heliconiaceae Nakai, Journ. Jap. Bot. 17: 201. 1941.
T.: *Heliconia* Linnaeus

Helicteraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 264. 1858 (*'Helictereae'*).
T.: *Helicteres* Linnaeus

Heliotropiaceae Schrader, Asperif. Linnei Comm. (in Comm. Soc. Sc. Goetting. 4:) 22. 1820 (*'Heliotropiceae'*).
T.: *Heliotropium* Linnaeus

Helleboraceae Spach, Hist. Nat. Vég. Phan. 7: 285. 1839.
T.: *Helleborus* Linnaeus

Heloniadaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 4. 1858 ('*Helonieae*').
T.: *Helonias* Linnaeus

Helosidaceae van Tieghem, Bull. Soc. Bot. France 43: 555. 1896 ('*Helosaceae*').
T.: *Helosis* L. C. Richard, nom. cons.

Helwingiaceae Decaisne, Ann. Sc. Nat. ser. 2. 6: 69. *t.* 7. 1836.
T.: *Helwingia* Willdenow

Hemerocallidaceae R. Brown, Prodr. 295. 1810 ('*Hemerocallideae*').
T.: *Hemerocallis* Linnaeus

Henriqueziaceae Bremekamp, Meded. Bot. Mus. Herb. Rijksuniv. Utrecht 141: 371. 1957.
T.: *Henriquezia* Bentham

Henslowiaceae Lindley, Nat. Syst. ed. 2. 173. 1836 ('*Hensloviaceae*').
T.: *Crypteronia* Blume (syn. *Henslowia* Wallich)

Hermanniaceae C. H. Schultz, Nat. Syst. Pflanzenr. 472. 1832.
T.: *Hermannia* Linnaeus

Hernandiaceae Blume, Bijdr. 550. 1825 ('*Hernandieae*').
T.: *Hernandia* Linnaeus

Herreriaceae Endlicher, Gen. Pl. 156. 1836 ('*Herrerieae*').
T.: *Herreria* Ruiz et Pavon

Hesperideae C. H. Schultz, Nat. Syst. Pflanzenr. 475. 1832 (nom. illeg.; fam. heterogen. incl. *Rutaceae, Theaceae,* etc.).

Heterantheraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 36. 1858 ('*Heteranthereae*').
T.: *Heteranthera* Ruiz et Pavon

Heteropyxidaceae Engler et Gilg, Syll. Pflanzenfam. ed. 9-10. 299. 1924.
T.: *Heteropyxis* Harvey, nom. cons. prop., non Griffith, nom. rej. prop.

Heterostylaceae J. Hutchinson, Fam. Fl. Pl. 2: 41. 1934 (nom. alt. illeg. vs. *Lilaeaceae*).
T.: *Lilaea* Humboldt et Bonpland (syn. *Heterostylus* W. J. Hooker)

Hewardiaceae Nakai, Ord. Fam. etc. App. 234. 1943.
T.: *Isophysis* T. Moore (syn. *Hewardia* J. D. Hooker, non J. E. Smith)

Hibbertiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 200. 1858.
T.: *Hibbertia* Andrews

Hibiscaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 275. 1858.
T.: *Hibiscus* Linnaeus

Hilleriaceae Nakai, Journ. Jap. Bot. 18: 99. 1942.
T.: *Hilleria* Vellozo

Himantandraceae Diels in Engler, Bot. Jahrb. 55: 126. 1917.
T.: *Galbulimima* F. M. Bailey (syn. *Himantandra* F. Mueller ex Diels)

Hippocastaneae De Candolle, Prodr. 1: 597. 1824 (nom. illeg. ≡ *Aesculaceae*).
T.: *Aesculus* Linnaeus

Hippocraticeae A. de Jussieu, Ann. Mus. Hist. Nat. Paris 18: 486. 1811 (nom. rej. prop. vs. *Celastraceae*).
T.: *Hippocratea* Linnaeus

Hippomanaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 244. 1858 ('*Hippomaneae*').
T.: *Hippomane* Linnaeus

Hippuridaceae Link, Handb. 1: 288. 1829 ('*Hippurideae*').
T.: *Hippuris* Linnaeus

Hirtellaceae Horaninow, Char. Ess. Fam. Regni Veg. 152. 1847 (nom. illeg. vs. *Chrysobalanaceae*; fam. heterogen. incl. *Rhizophoraceae, Vochysiaceae* et *Chailletiaceae*).
T.: *Hirtella* Linnaeus

Hirtellaceae Nakai, Ord. Fam. etc. App. 247. 1943 (nom. illeg., non Horaninow, 1847).
T.: *Hirtella* Linnaeus

Homalineae R. Brown in Tuckey, Narr. Exped. Congo 438. 1818 (nom. rej. prop. vs. *Flacourtiaceae*).
T.: *Homalium* Jacquin

Hoplestigmataceae Engler, Bot. Jahrb. 40. Beibl. 93: 80. 1908.
T.: *Hoplestigma* Pierre

Hornschuchiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 65. 1858 ('*Hornschuchieae*').
T.: *Hornschuchia* Nees

Huaceae Chevalier, Rev. Internat. Bot. Appl. 27: 28. 1947 ('*Huacaceae*').
T.: *Hua* De Wildeman

Hugoniaceae Arnott in Wight et Arnott, Prodr. Fl. Ind. Penins. 1: 71. 1834.
T.: *Hugonia* Linnaeus

Humbertiaceae Pichon, Not. Syst. 13: 23. 1947.
T.: *Humbertia* Lamarck

Humiriaceae A. de Jussieu in A. St. Hilaire, Fl. Bras. Merid. 2: 87. 1829.
T.: *Humiria* A. St. Hilaire (nom. cons. vs. *Houmiri* Aublet)

Hyacinthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 31. 1858 ('*Hyacintheae*').
T.: *Hyacinthus* Linnaeus

Hydnoraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 67. 1858 ('*Hydnoreae*').
T.: *Hydnora* Thunberg

Hydrangeaceae Dumortier, Anal. Fam. Pl. 36. 1829.
T.: *Hydrangea* Linnaeus

Hydrocaryes Link, Enum. Pl. Berol. 1: 141. 1821 (nom. illeg. ≡ *Trapaceae*).
T.: *Trapa* Linnaeus

Hydroceraceae Blume, Bijdr. 241. 1825 (*'Hydrocereae'*).
T.: *Hydrocera* Blume

Hydrocharitaceae A. L. de Jussieu, Gen. Pl. 67. 1789 (*'Hydrocharides'*).
T.: *Hydrocharis* Linnaeus

Hydrocotylaceae? (vide Erdtman, Pollen Morph. and Pl. Tax. 209. 1952).
T.: *Hydrocotyle* Linnaeus

Hydrogetones Link, Handb. 1: 282. 1829 (nom. rej. prop. vs. *Potamogetonaceae*).
T.: *Potamogeton* Linnaeus (syn. *Hydrogeton* Loureiro, non Persoon)

Hydroleaceae R. Brown in Tuckey, Narr. Exped. Congo 451. 1818 (*'Hydroleae'*).
T.: *Hydrolea* Linnaeus, nom. cons.

Hydropeltideae Dumortier, Comm. Bot. 64. 1822 (nom. rej. prop. vs. *Cabombaceae*).
T.: *Brasenia* Schreber (syn. *Hydropeltis* Michaux)

Hydrophyllaceae R. Brown, Prodr. 1: 492. 1810 (*'Hydrophylleae'*).
T.: *Hydrophyllum* Linnaeus

Hydrostachydaceae Engler, Bot. Jahrb. 20: 136. 1894.
T.: *Hydrostachys* Thouars

Hypecoaceae Nakai, Ord. Fam. etc. App. 240. 1943 (nomen; ?syn. tax. *Pteridophyllaceae*).
T.: *Hypecoum* Linnaeus

Hyperanthereae Link, Handb. 2: 130. 1831 (nom. illeg. ≡ *Moringaceae*).
T.: *Moringa* Jussieu (syn. *Hyperanthera* Forsskåhl)

Hypericaceae A. L. de Jussieu, Gen. Pl. 254. 1789 (*'Hyperica'*).
T.: *Hypericum* Linnaeus

Hypopithydes Link, Handb. 2: 403. 1831 (nom. illeg. ≡ *Monotropaceae*).
T.: *Monotropa* Linnaeus (syn. *Hypopithys* Adanson)

Hypoxidaceae R. Brown in Flinders, Voy. Terra Austr. 2: 576. 1814 (*'Hypoxideae'*).
T.: *Hypoxis* Linnaeus

I

Iasmineae Link, Handb. 1: 440. 1829 (vide *Jasminaceae;* nom. illeg. rej. vs. *Oleaceae*).

Icacinaceae Miers, Ann. Mag. Nat. Hist. ser. 2. 9: 221. 1852.
T.: *Icacina* A. de Jussieu

Ilicaceae Brongniart, Ann. Sc. Nat. 10: 329. 1827 (*'Ilicineae'*).
T.: *Ilex* Linnaeus

Illecebraceae Lindley, Veg. Kingdom 499. 1846.
T.: *Illecebrum* Linnaeus

Illiciaceae van Tieghem, Journ. de Bot. 14: 353. 1900.
T.: *Illicium* Linnaeus

Illigeraceae Blume, Ann. Sc. Nat. ser. 2. 2: 95. 1834 (*'Illigereae'*).
T.: *Illigera* Blume

Impatientaceae Dostál, Květena Čsr. 954. 1949 (nom. illeg. vs. *Balsaminaceae*).
T.: *Impatiens* Linnaeus

Iodaceae van Tieghem, Bull. Soc. Bot. France 44: 112. 1897.
T.: *Iodes* Blume

Iridaceae A. L. de Jussieu, Gen. Pl. 57. 1789 (*'Irides'*).
T.: *Iris* Linnaeus

Irvingiaceae Pierre, Bull. Soc. Linn. Paris 2: 1233. 1896.
T.: *Irvingia* J. D. Hooker

Iteaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 151. 1858.
T.: *Itea* Linnaeus

Ixiaceae Horaninow, Prim. Lin. Syst. Nat. 51. 1834 (nom. illeg. vs. *Iridaceae*).
T.: *Ixia* Linnaeus, sensu Ker-Gawler, nom. cons.

Ixioliriaceae Nakai, Ord. Fam. etc. App. 234. 1943.
T.: *Ixiolirion* Fischer

Ixonanthaceae L. Pfeiffer, Syn. Bot. 301. 1870; Exell et Mendonça, Bol. Soc. Brot. ser. 2A. 25: 105. 1951.
T.: *Ixonanthes* Jack

J

Jasionaceae Dumortier, Anal. Fam. Pl. 28. 1829 (*'Jasionideae'*).
T.: *Jasione* Linnaeus

Jasmineae A. L. de Jussieu, Gen. Pl. 104. 1789 (nom. rej. prop. vs. *Oleaceae*); Link, Handb. 1: 440. 1829 (*'Iasmineae'*).
T.: *Jasminum* Linnaeus

Johnsoniaceae Lotsy, Vortr. Bot. Stammesg. 3(1): 731. *f. 501.* 1911.
T.: *Johnsonia* R. Brown, nom. cons., non Miller, non Adanson, nec Necker

Juglandaceae Kunth, Ann. Sc. Nat. 2: 343. 1824 (*'Juglandeae'*).
T.: *Juglans* Linnaeus

Julianiaceae W. B. Hemsley, Phil. Trans. Roy. Soc. London ser. B. 199: 169. *t. 18-24.* 1907.
T.: *Juliania* Schlechtendal, nom. cons. prop.; syn. *Amphipterygium* Standley

Juncaceae A. L. de Jussieu, Gen. Pl. 43. 1789 ('*Junci*').
T.: *Juncus* Linnaeus

Juncaginaceae L. C. Richard, Mém. Mus. Hist. Nat. Paris 1: 365. 1815 ('*Juncagineae*').
T.: *Triglochin* Linnaeus (syn. *Juncago* Moench)

Jussieuaceae Drude in Schenck, Handb. 3(2): 385. 1887 (nom. illeg. vs. *Onagraceae*).
T.: *Jussieua* Linnaeus

K

Kaniaceae Nakai, Ord. Fam. etc. App. 245. 1943.
T.: *Kania* Schlechter

Kiggelariaceae Link, Handb. 2: 221. 1831.
T.: *Kiggelaria* Linnaeus

Kingiaceae Endlicher, Gen. Pl. 132. 1836.
T.: *Kingia* R. Brown

Kirengeshomaceae Nakai, Ord. Fam. etc. App. 245. 1943.
T.: *Kirengeshoma* Yatabé

Kobresiaceae Gilly, Iowa State Coll. Journ. Sc. 26: 210. 1952.
T.: *Kobresia* Willdenow

Koeberliniaceae Engler in Engler et Prantl, Nat. Pflanzenfam. 3(6): 319. *f. 148.* 1895.
T.: *Koeberlinia* Zuccarini

Koelreuteriaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 227. 1858 ('*Koelreuterieae*').
T.: *Koelreuteria* Laxmann

Krameriaceae Dumortier, Anal. Fam. Pl. 20. 1829.
T.: *Krameria* Loefling

L

Labiatae A. L. de Jussieu, Gen. Pl. 110. 1789 (nom. cons. alt. cum *Lamiaceae*).
T.: *Lamium* Linnaeus

Lachenaliaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 20. 1866 ('*Lachenaleae*').
T.: *Lachenalia* Jacquin

Lacistemaceae Martius, Nov. Gen. et Sp. 1: 154. 1826 ('*Lacistemeae*').
T.: *Lacistema* Swartz

Lactoridaceae Engler, Bot. Jahrb. 8: 53. 1887.
T.: *Lactoris* Philippi

Lagerstroemiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 338. 1858 ('*Lagerstroemieae*').
T.: *Lagerstroemia* Linnaeus

Lamiaceae Lindley, Nat. Syst. ed. 2. 275. 1836 (nom. alt. cum *Labiatae;* nom. cons. prop. vs. *Nepetaceae*).
T.: *Lamium* Linnaeus

Langsdorffiaceae van Tieghem, Ann. Sc. Nat. ser. 9. 6: 213. 1907.
T.: *Langsdorffia* Martius

Lapageriaceae L. Pfeiffer, Syn. Bot. 93. 1870 (nom. illeg. vs. *Philesiaceae*).
T.: *Lapageria* Ruiz et Pavon

Lardizabalaceae Endlicher, Ench. Bot. 417. 1841 ('*Lardizabaleae*').
T.: *Lardizabala* Ruiz et Pavon

Lasiopetalaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 271. 1858 ('*Lasiopetaleae*').
T.: *Lasiopetalum* J. E. Smith

Lauraceae A. L. de Jussieu, Gen. Pl. 80. 1789 ('*Lauri*').
T.: *Laurus* Linnaeus

Lawsoniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 338. 1858 ('*Lawsonieae*').
T.: *Lawsonia* Linnaeus

Lecythidaceae Poiteau, Mém. Mus. Hist. Nat. Paris 13: 141. *t.* 2-8. 1825 (nom. cons. prop. vs. *Napoleonaceae* et *Belvisiaceae*).
T.: *Lecythis* Loefling

Ledocarpaceae Meyen, Reise 1: 308. 1834 ('*Ledocarpeae*').
T.: *Balbisia* Cavanilles, nom. cons. vs. *Ledocarpon* Desfontaines, nom. rej., non *Balbisia* Willdenow, nec De Candolle, nom. homonyna rej.

Leeaceae Dumortier, Anal. Fam. Pl. 21. 1829.
T.: *Leea* Linnaeus

Legnotidae Ridley, Fl. Malay Penins. 1: 696. 1922 (nom. illeg. vs. *Cassipoureaceae*).
T.: *Cassipourea* Aublet (syn. *Legnotis* Swartz)

Leguminosae A. L. de Jussieu, Gen. Pl. 345. 1789 (nom. cons. alt. cum *Fabaceae* et incl. *Papilionaceae*).
T.: *Vicia* Linnaeus

Leitneriaceae Bentham in Bentham et J. D. Hooker, Gen. Pl. 3: 396. 1880 ('*Leitnerieae*').
T.: *Leitneria* Chapman

Lemnaceae S. F. Gray, Arr. Br. Pl. 2: 729. 1821 ('*Lemnadeae*').
T.: *Lemna* Linnaeus

Lennoaceae Solms-Laubach, Fam. Lenn. (Abhandl. Naturforsch. Ges. Halle 11:) 56. *t. 1-3.* 1870.
T.: *Lennoa* La Llave et Lexarza

Lentibulariaceae L. C. Richard in Poiteau et Turpin, Fl. Paris 1: 26. 1808 ('*Lentibularieae*').
T.: *Utricularia* Linnaeus (syn. *Lentibularia* Adanson, nom. illeg.)

Leoniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 142. 1858.
T.: *Leonia* Ruiz et Pavon

Lepidobotryaceae Léonard, Bull. Jard. Bot. Bruxelles 20: 31. 1950.
T.: *Lepidobotrys* Engler

Lepidocarpicae C. H. Schultz, Nat. Syst. Pflanzenr. 374. 1832 (nom. illeg. ≡ *Proteaceae*).
T.: *Protea* R. Brown (nom. cons. vs. *Lepidocarpus* Adanson, nom. rej.)

Leptaulaceae van Tieghem, Bull. Soc. Bot. France 44: 111. 1897.
T.: *Leptaulus* Bentham

Lepuropetalaceae Nakai, Ord. Fam. etc. App. 243. 1943.
T.: *Lepuropetalon* Ellis

Leuchtenbergiaceae L. Pfeiffer, Syn. Bot. 280. 1870 (nomen).
T.: *Leuchtenbergia* W. J. Hooker

Leucojaceae Dumortier, Anal. Fam. Pl. 57. 1829 ('*Leucoideae*').
T.: *Leucojum* Linnaeus

Lilaceae Ventenat, Tabl. Regne Vég. 2: 306. 1799 (nom. rej. prop. vs. *Oleaceae*).
T.: *Syringa* Linnaeus

Lilaeaceae Dumortier, Anal. Fam. Pl. 62. 1829 ('*Lilaearieae*').
T.: *Lilaea* Humboldt et Bonpland

Liliaceae A. L. de Jussieu, Gen. Pl. 49. 1789 ('*Lilia*').
T.: *Lilium* Linnaeus

Limnanthaceae R. Brown, London Edinburgh and Dublin Phil. Mag. 3: 70. 1833 ('*Limnantheae*').
T.: *Limnanthes* R. Brown, nom. cons., non Stokes, non *Limnanthus* Necker, nom. rej.

Limodoraceae Horaninow, Char. Ess. Fam. Regni Veg. 44. 1847 (nom. illeg. vs. *Orchidaceae*).
T.: *Limodorum* L. C. Richard, nom. cons.

Limosellaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 340. 1858 ('*Limoselleae*').
T.: *Limosella* Linnaeus

Linaceae S. F. Gray, Arr. Brit. Pl. 2: 639. 1821 ('*Lineae*').
T.: *Linum* Linnaeus

Lindleyaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 166. 1858.
T.: *Lindleya* Kunth (1824), nom. cons., non Kunth (1821), nec Nees; syn. *Lindleyella* Rydberg, nom. rej.

Lippayaceae Meisner, Pl. Vasc. Gen. 2: 112. 1836-43 ('*Lippayeae*').
T.: *Dentella* J. R. et G. Forster (syn. *Lippaya* Endlicher)

Liquidambaraceae L. Pfeiffer, Syn. Bot. 125. 1870 (nom. illeg. vs. *Altingiaceae*).
T.: *Liquidambar* Linnaeus

Lissocarpaceae Gilg in Engler et Gilg, Syll. Pflanzenf. ed. 9-10. 324. 1924.
T.: *Lissocarpa* Bentham

Littorellaceae S. F. Gray, Arr. Brit. Pl. 2: 294. 1821 ('*Littorellidae*').
T.: *Littorella* Bergius

Loasaceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 5: 21. *t. 1-5.* 1804 ('*Loaseae*').
T.: *Loasa* Adanson

Lobeliaceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 18: 1. 1811.
T.: *Lobelia* Linnaeus

Loganiaceae Martius, Nov. Gen. et Sp. 2: 133. 1827 ('*Loganieae*').
T.: *Logania* R. Brown, nom. cons.

Lomandraceae Lotsy, Vortr. Bot. Stammesg. 3(1): 761. *f. 520.* 1911 (nom. illeg. vs. *Xanthorrhoeaceae*).
T.: *Lomandra* Labillardière

Lomentaceae R. Brown in Flinders, Voy. Terra Austr. 2: 551. 1814 (nom. alt. illeg. vs. *Caesalpiniaceae*).
T.: *Caesalpinia* Linnaeus

Loniceraceae Horaninow, Char. Ess. Fam. Regni Veg. 95. 1847 (nom. illeg. ≡ *Caprifoliaceae*).
T.: *Lonicera* Linnaeus

Lophiolaceae Nakai, Ord. Fam. etc. App. 225. 1943.
T.: *Lophiola* Ker-Gawler

Lophiraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 120. 1858.
T.: *Lophira* Gaertner

Lophophytaceae Horaninow, Char. Ess. Fam. Regni Veg. 22. 1847.
T.: *Lophophytum* Schott et Endlicher

Lophopyxidaceae H. Pfeiffer, Rev. Sudamer. Bot. 10: 4. 1951.
T.: *Lophopyxis* J. D. Hooker

Loranthaceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 12: 292. 1808 ('*Lorantheae*').
T.: *Loranthus* Linnaeus (1762), nom. cons., non Linnaeus (1753), nom. rej.

Lowiaceae Ridley, Fl. Malay Penins. 4: 291. 1924.
T.: *Orchidantha* N. E. Brown (syn. *Lowia* Scortechini)
Lupulaceae Link, Handb. 2: 443. 1831 ('*Lupulinae*').
T.: *Humulus* Linnaeus (syn. *Lupulus* Miller)
Luxemburgiaceae van Tieghem, Journ. de Bot. 15: 191. 1901.
T.: *Luxemburgia* A. St. Hilaire
Lygodysodeaceae Bartling, Ord. Nat. Pl. 207. 1830.
T.: *Lygodysodea* Ruiz et Pavon
Lysimachiae A. L. de Jussieu, Gen. Pl. 95. 1789 (nom. rej. prop. vs. *Primulaceae*).
T.: *Lysimachia* Linnaeus
Lythraceae Jaume St. Hilaire, Expos. Fam. 2: 175. 1805 ('*Lythrariae*'; nom. cons. prop. vs. *Salicariaceae*).
T.: *Lythrum* Linnaeus

M

Macarisiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 295. 1858 ('*Macharisieae*').
T.: *Macarisia* Thouars
Magnoliaceae A. L. de Jussieu, Gen. Pl. 280. 1789 ('*Magnoliae*').
T.: *Magnolia* Linnaeus
Malaceae Small, Fl. Southeastern U.S. 529. 1903.
T.: *Malus* Miller
Malachodendraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 130. 1858 ('*Malachodendreae*').
T.: *Stuartia* Linnaeus (syn. *Malachodendrum* Persoon)
Malesherbiaceae D. Don, Edinburgh New Phil. Journ. 2: 321. 1827.
T.: *Malesherbia* Ruiz et Pavon
Malpighiaceae A. L. de Jussieu, Gen. Pl. 252. 1789 ('*Malpighiae*').
T.: *Malpighia* Linnaeus
Malvaceae A. L. de Jussieu, Gen. Pl. 271. 1789.
T.: *Malva* Linnaeus
Maquinae Martius, Consp. Regni Veg. 52. 1835 (nom. illeg. ≡ *Aristoteliaceae*).
T.: *Aristotelia* L'Héritier, nom. cons. vs. *Aristotela* Adanson, nom. rej.
Marantaceae Lindley, Nat. Syst. 267. 1830.
T.: *Maranta* Linnaeus
Marathrineae Dumortier, Anal. Fam. Pl. 60. 1829 (nom. illeg. syn. *Podostemaceae*).
T.: *Marathrum* Humboldt et Bonpland
Marcgraviaceae De Candolle, Prodr. 1: 565. 1824.
T.: *Marcgravia* Linnaeus
Martyniaceae Stapf in Engler et Prantl, Nat. Pflanzenfam. 4(3b): 265. *f. 102.* 1895.
T.: *Martynia* Linnaeus
Maundiaceae Nakai, Ord. Fam. etc. App. 213. 1943.
T.: *Maundia* F. Mueller
Mayacaceae Meisner, Pl. Vasc. Gen. 407. 1842 ('*Mayaceae*').
T.: *Mayaca* Aublet
Medusagynaceae Engler et Gilg, Syll. Pflanzenfam. ed. 9-10. 280. 1924.
T.: *Medusagyne* J. G. Baker
Medusandraceae Brenan, Kew Bull. 1952: 228. *f. 1-2.* 1952.
T.: *Medusandra* Brenan
Melampyraceae Lindley, Syn. Brit. Fl. 194. 1829.
T.: *Melampyrum* Linnaeus
Melanthiaceae R. Brown, Prodr. 1: 272. 1810 ('*Melanthaceae*').
T.: *Melanthium* Linnaeus
Melastomataceae A. L. de Jussieu, Gen. Pl. 328. 1789 ('*Melastomae*').
T.: *Melastoma* Linnaeus
Meliaceae A. L. de Jussieu, Gen. Pl. 263. 1789 ('*Meliae*').
T.: *Melia* Linnaeus
Melianthaceae Link, Handb. 2: 322. 1831 ('*Melianthеae*').
T.: *Melianthus* Linnaeus
Meliosmeae Endlicher, Gen. Pl. 1074. 1840 (nom. rej. prop. vs. *Sabiaceae*).
T.: *Meliosma* Blume
Melochiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 271. 1858 ('*Melochieae*').
T.: *Melochia* Linnaeus
Memecylaceae De Candolle, Prodr. 3: 5. 1828 ('*Memecyleae*').
T.: *Memecylon* Linnaeus
Mendonciaceae Bremekamp, Kon. Ned. Akad. Wetensch. Amsterdam, Proc. ser. C. 56(5): 540. 1953.
T.: *Mendoncia* Vandelli
Menispermaceae A. L. de Jussieu, Gen. Pl. 284. 1789 ('*Menisperma*').
T.: *Menispermum* Linnaeus
Menyanthaceae Dumortier, Anal. Fam. Pl. 20. 1829 ('*Menyanthideae*').
T.: *Menyanthes* Linnaeus
Menziesiaceae Klotzsch, Linnaea 24: 11. 1851 (in clavi).
T.: *Menziesia* J. E. Smith

Mesembryneae Dumortier, Anal. Fam. Pl. 37. 1829 (nom. illeg. syn. *Ficoidaceae*).
T.: *Mesembryanthemum* Linnaeus (syn. *Mesembryum* Adanson, nom. illeg.)

Mesembryanthemaceae Fenzl, Ann. Mus. Wien 1: 349. 1836 ('*Mesembryanthemeae*').
T.: *Mesembryanthemum* Linnaeus

Mespilaceae C. H. Schultz, Nat. Syst. Pflanzenr. 509. 1832 ('*Mespileae*').
T.: *Mespilus* Linnaeus

Micrantheaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 182. 1858 ('*Micrantheae*').
T.: *Micrantheum* Desfontaines (non *Micranthemum* L. C. Richard, nom. cons.)

Millingtoniaceae Wight et Arnott, Prodr. Fl. Penins. Ind. Or. 1: 115. 1834 (nom. rej. prop. vs. *Sabiaceae*).
T.: *Meliosma* Blume (syn. *Millingtonia* Roxburgh non Linnaeus f.)

Mimosaceae R. Brown in Flinders, Voy. Terra Austr. 2: 551. 1814 ('*Mimoseae*').
T.: *Mimosa* Linnaeus

Mitrastemonaceae Makino, Bot. Mag. Tokyo 25: 252. 1911.
T.: *Mitrastemon* Makino (*Mitrastemma* Makino, ubi err. orth.)

Miyoshiaceae Makino, Bot. Mag. Tokyo 17: 144. 1903 (in obs.; nom. rej. prop. vs. *Petrosaviaceae* J. Hutchinson).
T.: *Miyoshia* Makino (syn. tax. *Petrosavia* Beccari)

Modeccaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 386. 1858.
T.: *Modecca* Lamarck

Molluginaceae J. Hutchinson, Fam. Fl. Pl. 1: 128. *f.* 54. 1926.
T.: *Mollugo* Linnaeus

Monimiaceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 14: 133. 1809 ('*Monimieae*').
T.: *Monimia* Thouars

Monodoraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 126. 1858 ('*Monodoreae*').
T.: *Monodora* Dunal

Monotropaceae Nuttall, Gen. N. Am. Pl. 1: 272. 1818 ('*Monotropeae*').
T.: *Monotropa* Linnaeus

Montiaceae Dumortier, Anal. Fam. Pl. 19. 1829.
T.: *Montia* Linnaeus

Montiniaceae Nakai, Ord. Fam. etc. App. 243. 1943.
T.: *Montinia* Thunberg

Moraceae Link, Handb. 2: 444. 1831 ('*Moriformes*').
T.: *Morus* Linnaeus

Morinaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 234. 1858.
T.: *Morina* Linnaeus

Moringaceae R. Brown in Denham et Clapperton, Trav. N. and Central Afr. 238. 1826 ('*Moringeae*').
T.: *Moringa* A. L. de Jussieu

Moutabeaceae Endlicher, Ench. Bot. 365. 1841 ('*Moutabeae*').
T.: *Moutabea* Aublet

Musaceae A. L. de Jussieu, Gen. Pl. 61. 1789 ('*Musae*').
T.: *Musa* Linnaeus

Mutisiaceae Lindley, Nat. Syst. ed. 2. 251. 1836.
T.: *Mutisia* Linnaeus

Myoporaceae R. Brown, Prodr. 514. 1810 ('*Myoporinae*').
T.: *Myoporum* G. Forster

Myricaceae S. F. Gray, Arr. Brit. Bl. 2: 249. 1821 ('*Myricae*'), (nom. cons. prop. vs. *Casuarineae*).
T.: *Myrica* Linnaeus

Myriophyllaceae C. H. Schultz, Nat. Syst. Pflanzenr. 324. 1832 ('*Myriophylleae*').
T.: *Myriophyllum* Linnaeus

Myristicaceae R. Brown, Prodr. 399. 1810 ('*Myristicaeae*').
T.: *Myristica* Boehmer, nom. cons.

Myrobalaneae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 5: 223. 1804 (nom. rej. prop. vs. *Combretaceae*).
T.: *Terminalia* Linnaeus, nom. cons. (syn. *Myrobalanus* Gaertner)

Myrothamnaceae Niedenzu in Engler et Prantl, Nat. Pflanzenfam. 3(2a): 103. 1891.
T.: *Myrothamnus* Welwitsch

Myrrhiniaceae Arnott, Ann. Nat. Hist. 3: 154. 1839 ('*Myrrhinieae*'; nom. provis.).
T.: *Myrrhinium* Schott

Myrsinaceae R. Brown, Prodr. 352. 1810 ('*Myrsineae*').
T.: *Myrsine* Linnaeus

Myrtaceae A. L. de Jussieu, Gen. Pl. 322. 1789 ('*Myrti*').
T.: *Myrtus* Linnaeus

Myzodendraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 236. 1858 ('*Myzodendreae*').
T.: *Myzodendron* J. R. et G. Forster

N

Najadaceae A. L. de Jussieu, Gen. Pl. 18. 1789 ('*Naides*').
T.: *Najas* Linnaeus

Nandinaceae Horaninow, Prim. Lin. Syst. Nat. 90. 1834 (nom. illeg. syn. *Berberidaceae*).
T.: *Nandina* Thunberg

Napoleoneae P. Beauvois, Fl. Oware et Benin, 2: 29. *t.* 78. 1810 (nom. rej. prop. vs. *Lecythidaceae*).
T.: *Napoleona* P. Beauvois

Narcissi A. L. de Jussieu, Gen. Pl. 54. 1789 (nom. rej. prop. vs. *Amaryllidaceae*).
T.: *Narcissus* Linnaeus

Nectaropetalaceae Exell et Mendonça, Consp. Fl. Angol. 1: 246, 391. 1951.
T.: *Nectaropetalum* Engler

Neilliaceae Miquel, Fl. Ind. Bat. 1(1): 390. 1855.
T.: *Neillia* D. Don

Nelumbonaceae Dumortier, Anal. Fam. Pl. 53. 1829 ('*Nelumboneae*').
T.: *Nelumbo* Adanson

Neottiaceae Horaninow, Prim. Lin. Syst. Nat. 50. 1834 (nom illeg. vs. *Orchidaceae*).
T.: *Neottia* L. C. Richard, nom. cons.

Nepenthaceae Dumortier, Anal. Fam. Pl. 15. 1829 ('*Nepenthideae*').
T.: *Nepenthes* Linnaeus

Nepetaceae Horaninow, Prim. Lin. Syst. Nat. 76. 1834 (nom. rej. prop. vs. *Lamiaceae*).
T.: *Nepeta* Linnaeus

Neumanniaceae van Tieghem, Journ. de Bot. 13: 367. 1899.
T.: *Neumannia* A. Richard

Neuradaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 288. 1858 ('*Neuradeae*').
T.: *Neurada* Linnaeus

Nhandirobaceae A. St. Hilaire, Mém. Mus. Hist. Nat. Paris 9: 215. 1822 ('*Nandhirobeae*').
T.: *Fevillea* Linnaeus (syn. *Nhandiroba* Adanson)

Nigellaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 76. 1858.
T.: *Nigella* Linnaeus

Nitrariaceae Lindley, Nat. Syst. 163. 1830.
T.: *Nitraria* Linnaeus

Nolanaceae Dumortier, Anal. Fam. Pl. 20. 1829.
T.: *Nolana* Linnaeus

Nolinaceae Nakai, Ord. Fam. etc. App. 226. 1943.
T.: *Nolina* Michaux

Nucamentaceae Hoffmansegg et Link, Fl. Port. 2: 95. 1820 (nom. illeg.).
T.: *Xanthium* Linnaeus

Nupharaceae Nakai, Ord. Fam. etc. App. 238. 1943.
T.: *Nuphar* J. E. Smith

Nuytsiaceae van Tieghem, Bull. Soc. Bot. France 43: 250. 1896.
T.: *Nuytsia* R. Brown

Nyctaginaceae A. L. de Jussieu, Gen. Pl. 90. 1789 ('*Nyctagines*').
T.: *Mirabilis* Linnaeus (syn. *Nyctago* A. L. de Jussieu, nom. illeg.)

Nyctanthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 284. 1858 ('*Nyctantheae*').
T.: *Nyctanthes* Linnaeus

Nymphaeaceae Salisbury in Koenig et Sims, Ann. Bot. 2: 70. 1805 ('*Nymphaceae*').
T.: *Nymphaea* Linnaeus, p.p., sensu J. E. Smith, nom. cons.

Nyssaceae A. de Jussieu, Dict. Sc. Nat. 35: 267. 1825 ('*Nysseae*').
T.: *Nyssa* Linnaeus

O

Oceanopapaveraceae?
T.: *Oceanopapaver* Guillaumin

Ochnaceae De Candolle, Ann. Mus. Hist. Nat. Paris 17: 410. 1811.
T.: *Ochna* Linnaeus

Ochranthaceae Lindley, Nat. Syst. ed. 2. 78. 1836 (pro sub-ord.).
T.: *Turpinia* Ventenat (syn. *Ochranthe* Lindley)

Octoknemaceae van Tieghem, Journ. de Bot. 19: 45. 1905 ('*Octocnemaceae*').
T.: *Octoknema* Pierre

Oenothereae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 59. 1858 (nom. illeg. vs. *Onagraceae*).
T.: *Oenothera* Linnaeus

Olacaceae Mirbel, Bull. Soc. Philom. 3: 377. 1813 ('*Olacineae*').
T.: *Olax* Linnaeus

Oleaceae Hoffmansegg et Link, Fl. Port. 1: 386. 1809 ('*Oleinae*'; nom. cons. prop. vs. *Lilaceae*).
T.: *Olea* Linnaeus

Oliniaceae Arnott, Ann. Nat. Hist. 3: 154. 1839 ('*Olinieae*').
T.: *Olinia* Thunberg, nom. cons.

Onagraceae A. L. de Jussieu, Gen. Pl. 317. 1789 ('*Onagrae*').
T.: *Oenothera* Linnaeus

Onosmaceae Horaninow, Prim. Lin. Syst. Nat. 75. 1834 (nom. illeg. vs. *Boraginaceae*).
T.: *Onosma* De Candolle

Opercullariaceae Dumortier, Anal. Fam. Pl. 29. 1829.
T.: *Opercularia* Gaertner

Ophiopogonaceae L. Pfeiffer, Syn. Bot. 93. 1870 (nom. illeg. vs. *Peliosanthiaceae*).
T.: *Ophiopogon* Ker-Gawler

Ophiospermeae Ventenat, Descr. Pl. Nouv. Jardin Cels. *sub t. 861.* 1802 (nom. illeg. ≡ *Myrsinaceae*).
T.: *Myrsine* Linnaeus

Opiliaceae van Tieghem, Ann. Sc. Nat. ser. 7. 17: 256. 1893.
T.: *Opilia* Roxburgh

Oporanthaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 97. 1866 (*'Oporantheae'*).
T.: *Sternbergia* Waldstein et Kitaibel (syn. *Oporanthus* Herbert)

Opuntiaceae A. de Jussieu, Dict. Sc. Nat. 35: 144. 1825 (nom. illeg. vs. *Cactaceae*).
T.: *Opuntia* Linnaeus

Orchidaceae A. L. de Jussieu, Gen. Pl. 64. 1789 (*'Orchideae'*).
T.: *Orchis* Linnaeus

Ornithogalaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 33. 1866 (*'Ornithogaleae'*).
T.: *Ornithogalum* Linnaeus

Orobanchaceae Ventenat, Tabl. Regne Vég. 2: 292. 1799 (*'Orobanchoideae'*).
T.: *Orobanche* Linnaeus

Orontiaceae Bartling, Ord. Nat. Pl. 68. 1830.
T.: *Orontium* Linnaeus

Osyrinae Link, Handb. 1: 371. 1829 (nom. illeg. vs. *Santalaceae*).
T.: *Osyris* Linnaeus

Oxalidaceae R. Brown in Tuckey, Narr. Exped. Congo 433. 1818 (*'Oxalideae'*).
T.: *Oxalis* Linnaeus

P

Pachysandraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 358. 1858 (*'Pachysandreae'*).
T.: *Pachysandra* Michaux

Paeoniaceae Bartling, Ord. Nat. Pl. 251. 1830.
T.: *Paeonia* Linnaeus

Palmae A. L. de Jussieu, Gen. Pl. 37. 1789 (nom. cons. alt. cum *Arecaceae*).
T.: *Areca* Linnaeus

Pancratiaceae Horaninow, Char. Ess. Fam. Regni Veg. 50. 1847 (nom. illeg. vs. *Amaryllidaceae* nom. cons. prop.).
T.: *Pancratium* Linnaeus

Pandaceae Pierre, Bull. Soc. Linn. Paris 2: 1255. 1896.
T.: *Panda* Pierre

Pandanaceae R. Brown, Prodr. 340. 1810 (*'Pandaneae'*).
T.: *Pandanus* Linnaeus

Pangiaceae Blume, Tijdschr. Nat. Gesch. Phys. 1: 132. 1834 (nomen).
T.: *Pangium* Reinwardt

Papaveraceae A. L. de Jussieu, Gen. Pl. 235. 1789.
T.: *Papaver* Linnaeus

Papayaceae Blume, Tijdschr. Nat. Gesch. Phys. 1: 132. 1834 (nom. illeg. ≡ *Caricaceae*).
T.: *Carica* Linnaeus

Papilionaceae R. Brown in Flinders, Voy. Terra Austr. 2: 552. 1814 (nom. cons. alt. cum *Fabaceae* et *Leguminosae* p.p.).
T.: *Vicia* Linnaeus

Parianaceae Nakai, Ord. Fam. etc. App. 222. 1943.
T.: *Pariana* Aublet

Parideae Dumortier, Anal. Fam. Pl. 53. 1829 (nom. rej. prop. vs. *Trilliaceae*); Link, Handb. 1: 277. 1829 (*'Parideae'*).
T.: *Paris* Linnaeus

Parnassiaceae S. F. Gray, Arr. Brit. Pl. 2: 670. 1821 (*'Parnassieae'*).
T.: *Parnassia* Linnaeus

Paronychieae A. St. Hilaire, Mém. Mus. Hist. Nat. Paris 2: 386. 1815 (nom. illeg. vs. *Illecebraceae*).
T.: *Paronychia* Miller

Paropsiaceae Dumortier, Anal. Fam. Pl. 37. 1829.
T.: *Paropsia* Thouars

Parrotiaceae Horaninow, Prim. Lin. Syst. Nat. 79. 1834 (nom. illeg. vs. *Hamamelidaceae*).
T.: *Parrotia* C. A. Meyer

Partheniaceae Link, Handb. 1: 816. 1829.
T.: *Parthenium* Linnaeus

Passifloraceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 6: 102. *t. 37-41.* 1805 (*'Passifloreae'*).
T.: *Passiflora* Linnaeus

Patmaceae C. H. Schultz, Syst. Nat. Pflanzenr. 275. 1832 (nom. illeg. ≡ *Rafflesiaceae*).
T.: *Rafflesia* R. Brown

Patrisiaceae Martius, Consp. Regni Veg. 58. 1835.
T.: *Ryania* Vahl, nom. cons. vs. *Patrisia* L. C. Richard, nom. rej.

Paulowniaceae Nakai, Journ. Jap. Bot. 24: 13. 1949.
T.: *Paulownia* Sieber et Zuccarini

Paviaceae Horaninow, Prim. Lin. Syst. Nat. 100. 1834 (nom. rej. prop. vs. *Aesculaceae*).
T.: *Aesculus* Linnaeus (syn. *Pavia* Miller)

Pedaliaceae R. Brown, Prodr. 1: 519. 1810 (*'Pedalinae'*).
T.: *Pedalium* Linnaeus

Pedulicularidaceae A. L. de Jussieu, Gen. Pl. 99. 1789 (*'Pediculares'*).
T.: *Pedicularis* Linnaeus

Peliosanthaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 63. 1866 (*'Peliosantheae'*).
T.: *Peliosanthes* Andrews

Pellicieraceae Beauvisage, Contr. Ét. Anat. Ternstroem. 235, 450. 1920.
T.: *Pelliciera* Planchon et Triana

Penaeaceae Guillemin, Dict. Class. Hist. Nat. 13: 171. 1828.
T.: *Penaea* Linnaeus

Pennantiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 301. 1858 (*'Pennantieae'*).
T.: *Pennantia* J. R. et G. Forster

Pentadiplandraceae J. Hutchinson et J. M. Dalziel, Fl. W. Trop. Afr. 1: 461. *f. 162.* 1928.
T.: *Pentadiplandra* Baillon

Pentaphragmataceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 95. 1858 (*'Pentaphragmeae'*).
T.: *Pentaphragma* G. Don

Pentaphylacaceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 214. 1897.
T.: *Pentaphylax* Gardner et Champion

Penthoraceae van Tieghem, Journ. de Bot. 12: 150. 1898.
T.: *Penthorum* Linnaeus

Peperomiaceae? (vide Erdtman, Pollen Morph. and Pl. Tax. 318. 1952).
T.: *Peperomia* Ruiz et Pavon

Peraceae Klotzsch, Monatsber. Akad. Wiss. Berlin 1859: 246. 1859.
T.: *Pera* Mutis

Perdiciaceae Link, Handb. 1: 728. 1829 (*'Perdicieae'*).
T.: *Perdicium* Linnaeus

Peridiscaceae Kuhlmann, Arquiv. Serv. Florest. Rio de Janeiro 3: 3. 1947.
T.: *Peridiscus* Bentham

Periplocaceae Schlechter, Notizbl. Berlin 9: 23. 1924.
T.: *Periploca* Linnaeus

Peripterygiaceae F. N. Williams, Bull. Herb. Boiss. ser. 2. 5: 225. 1905 (nom. illeg. ≡ *Cardiopteridaceae*).
T.: *Peripterygium* Hasskarl

Perseaceae Horaninow, Prim. Lin. Syst. Nat. 61. 1834 (nom. illeg.; syn. *Lauraceae*).
T.: *Persea* Miller, nom. cons.

Personatae Ventenat, Tabl. Regne Vég. 2: 351. 1799 (nom. illeg.; syn. *Scrophulariaceae*).

Petermanniaceae J. Hutchinson, Fam. Fl. Pl. 2: 113. *f. 43.* 1934.
T.: *Petermannia* F. Mueller, nom. cons., non Klotzsch, nom. rej.

Petiveriaceae C. A. Agardh, Aphor. Bot. 221. 1825 (*'Petivereae'*).
T.: *Petiveria* Linnaeus

Petreaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 364. 1858.
T.: *Petrea* Linnaeus

Petrosaviaceae J. Hutchinson, Fam. Fl. Pl. 2: 36. *f. 5.* 1934 (nom. cons. prop. vs. *Miyoshiaceae, Protoliriaceae* et *Petrosaviaceae* Makino).
T.: *Petrosavia* Beccari

Petrosaviaceae Makino, Bot. Mag. Tokyo 17: 208. 1903 (in obs. nom. illeg. vs. *Miyoshiaceae* et nom. rej. prop. vs. *Petrosaviaceae* J. Hutchinson).
T.: *Miyoshia* Makino (syn. tax. *Petrosavia* Beccari)

Phaleriaceae Meisner, Pl. Vasc. Gen. 1: 323. 1836-43 (*'Phalerieae'*).
T.: *Phaleria* Jack

Phelypaeaceae Horaninow, Prim. Lin. Syst. Nat. 73. 1834 (nom. illeg. vs. *Orobanchaceae*).
T.: *Phelypaea* Desfontaines

Philadelphaceae D. Don, Edinburgh New Phil. Journ. 1: 133. 1826 (*'Philadelpheae'*).
T.: *Philadelphus* Linnaeus

Philesiaceae Dumortier, Anal. Fam. Pl. 53. 1839 (err. orth. *Phylesiaceae*).
T.: *Philesia* A. L. de Jussieu

Philippodendraceae Endlicher, Gen. Pl. 1004. 1839 (*'Philippodendreae'*).
T.: *Philippodendrum* Poiteau

Philocrenaceae Bongard, Gen. Lacis Rev. (in Mém. Acad. St. Petersburg ser. 3. 3: 72. 1835) 4. 1834 (nom. illeg. vs. *Podostemaceae*).
T.: *Philocrena* Bongard

Philydraceae Lindley, Nixus Pl. 22. 1833 (*'Phylidreae'*).
T.: *Philydrum* Gaertner

Phoenicaceae C. H. Schultz, Nat. Syst. Pflanzenr. 316. 1832.
T.: *Phoenix* Linnaeus

Phormiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 7. 1858.
T.: *Phormium* J. R. et G. Forster

Phrymaceae Schauer in De Candolle, Prodr. 11: 520. 1847.
T.: *Phryma* Linnaeus

Phylicaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 186. 1858.
T.: *Phylica* Linnaeus

Phyllanthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 249. 1858 ('*Phyllantheae*').
T.: *Phyllanthus* Linnaeus

Phyllonomaceae Rusby, N. Amer. Fl. 22(2): 191. 1905.
T.: *Phyllonoma* Willdenow

Phytelephantaceae Martius, Consp. Regni Veg. 6. 1835 ('*Phytelephanteae*'; nomen).
T.: *Phytelephas* Ruiz et Pavon

Phytocrenaceae R. Brown in Bennett, Pl. Jav. Rar. 244. 1852 ('*Phytocreneae*').
T.: *Phytocrene* Wallich

Phytolaccaceae R. Brown in Tuckey, Narr. Exped. Congo 454. 1818 ('*Phytolacceae*').
T.: *Phytolacca* Linnaeus

Picrodendraceae Small, Journ. New York Bot. Gard. 18: 184. 1917.
T.: *Picrodendron* Planchon

Pilocarpaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 221. 1858 ('*Pilocarpeae*').
T.: *Pilocarpus* Vahl

Pinguiculaceae Dumortier, Anal. Fam. Pl. 19. 1829.
T.: *Pinguicula* Linnaeus

Piperaceae Lindley, Nat. Syst. 174. 1830.
T.: *Piper* Linnaeus

Pisoniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 363. 1858 ('*Pisonieae*').
T.: *Pisonia* Linnaeus

Pistaciaceae Caruel, Nuov. Giorn. Bot. Ital. 11: 22. 1879 (nom. cons. prop. vs. *Terebinthaceae* p.p.).
T.: *Pistacia* Linnaeus

Pistiaceae Dumortier, Anal. Fam. Pl. 59. 1829.
T.: *Pistia* Linnaeus

Pistolochinae Link, Handb. 1: 1829 (nom. illeg. syn. *Aristolochiaceae*).
T.: *Aristolochia* Linnaeus (syn. *Pistolochia* Rafinesque)

Pittosporaceae R. Brown in Flinders, Voy. Terra Austr. 2: 542. 1814.
T.: *Pittosporum* Gaertner

Plagianthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 272. 1858 ('*Plagiantheae*').
T.: *Plagianthus* J. R. et G. Forster

Plantaginaceae A. L. de Jussieu, Gen. Pl. 89. 1789 ('*Plantagines*').
T.: *Plantago* Linnaeus

Platanaceae Dumortier, Anal. Fam. Pl. 11. 1829 ('*Plataneae*').
T.: *Platanus* Linnaeus

Platycaryaceae Nakai, Hisi-Shokubutsu 51. 1930 (ex Nakai, Ord. Fam. etc. 37. 1943).
T.: *Platycarya* Sieber et Zuccarini

Platymetreae Salisbury, Gen. Pl. (ed. J. E. Gray) 9. 1866 (nom. illeg. vs. *Orontiaceae*).
T.: *Tupistra* Ker-Gawler (syn. *Platymetra* Noronha ex Salisbury, nomen ut videtur illeg.)

Pleurisanthaceae van Tieghem, Bull. Soc. Bot. France 44: 116. 1897.
T.: *Pleurisanthes* Baillon

Plocospermaceae J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Plocosperma* Bentham

Plumbaginaceae A. L. de Jussieu, Gen. Pl. 92. 1789 ('*Plumbagines*').
T.: *Plumbago* Linnaeus

Plumeriaceae Horaninow, Prim. Lin. Syst. Nat. 70. 1834 (nom. illeg. vs. *Apocynaceae*).
T.: *Plumeria* Linnaeus

Poaceae Nash in Small, Fl. Southeast U.S. 48. 1903 (nom. alt. cum *Gramineae*).
T.: *Poa* Linnaeus

Podoaceae Franchet, Pl. Delav. 145. *t.* 32-35. 1889 ('*Podoonaceae*').
T.: *Dobinea* Buchanan (syn. *Podoon* Baillon)

Podophyllaceae De Candolle, Syst. Nat. 2: 31. 1821 ('*Podophylleae*').
T.: *Podophyllum* Linnaeus

Podostemaceae L. C. Richard in Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 1: 246. 1815 ('*Podostemeae*').
T.: *Podostemum* L. C. Richard

Polemoniaceae A. L. de Jussieu, Gen. Pl. 136. 1789 ('*Polemonia*').
T.: *Polemonium* Linnaeus

Polpodaceae Nakai, Journ. Jap. Bot. 18: 109. 1942.
T.: *Polpoda* Presl

Polygalaceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 14: 389. 1809 ('*Polygaleae*').
T.: *Polygala* Linnaeus

Polygonaceae A. L. de Jussieu, Gen. Pl. 82. 1789 ('*Polygoneae*').
T.: *Polygonum* Linnaeus

Polygonanthaceae Croizat, Journ. Cactus and Succ. Soc. Amer. 15: 64. 1943.
T.: *Polygonanthus* Ducke

Polygonataceae Salisbury, Gen. Pl. (ed. J. E. Gray) 63. 1866 ('*Polygonateae*').
T.: *Polygonatum* Adanson

Polyosmataceae Blume, Mus. Bot. Lugd.-Bat. 1: 258. 1850 ('*Polyosmaceae*').
T.: *Polyosma* Blume

Pomaceae S. F. Gray, Arr. Brit. Pl. 2: 562. 1821 (nom. illeg. ≡ *Mespilaceae*).

Pongatieae Endlicher, Gen. Pl. 519. 1838 (nom. illeg. ≡ *Sphenocleaceae*).
T.: *Sphenoclea* Gaertner, nom. cons. vs. *Pongati* Adanson, nom. rej.

Pontederiaceae Kunth in Humboldt, Bonpland et Kunth, Nov. Gen. et Sp. 1: 265. 1816.
T.: *Pontederia* Linnaeus

Poranaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 364. 1858.
T.: *Porana* Burmann

Portulacaceae A. L. de Jussieu, Gen. Pl. 312. 1789 (*'Portulaceae'*).
T.: *Portulaca* Linnaeus

Posidoniaceae Lotsy, Vortr. Bot. Stammesgesch. 3(1): 658. *f. 441.* 1911.
T.: *Posidonia* Koenig, nom. cons.

Potaliaceae Martius, Nov. Gen. et Sp. 2: 133. 1827.
T.: *Potalia* Aublet

Potamogetonaceae Dumortier, Anal. Fam. Pl. 59. 1829 (*'Potamogetoneae'*; nom. cons. prop. vs. *Hydrogetonaceae*).
T.: *Potamogeton* Linnaeus

Potentillaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 167. 1858 (*'Potentilleae'*).
T.: *Potentilla* Linnaeus

Primulaceae Ventenat, Tabl. Regne Vég. 2: 285. 1799 (nom. cons. prop. vs. *Lysimachiaceae*).
T.: *Primula* Linnaeus

Prockiaceae D. Don, Edinburgh New Phil. Journ. 10: 120. 1831 (nom. illeg. vs. *Bixaceae*).
T.: *Prockia* P. Browne

Proteaceae A. L. de Jussieu, Gen. Pl. 78. 1789 (*'Proteae'*).
T.: *Leucadendron* R. Brown (nom. cons. vs. *Protea* Linnaeus)

Protoliriaceae Makino, Bot. Mag. Tokyo 17: 208. 1903 (in obs.; nom. illeg. vs. *Miyoshiaceae* et nom. rej. prop. vs. *Petrosaviaceae* J. Hutchinson).
T.: *Miyoshia* Makino (syn. tax. *Petrosavia* Beccari et *Protolirion* Ridley)

Pseudanthaceae Endlicher, Gen. Pl. 328. 1838.
T.: *Pseudanthus* Sprengel

Psylliaceae Horaninow, Prim. Lin. Syst. Nat. 69. 1834 (nom. illeg. vs. *Plantaginaceae*).
T.: *Plantago* Linnaeus (syn. *Psyllium* A. L. de Jussieu)

Pteleaceae Kunth, Ann. Sc. Nat. 2: 354. 1824.
T.: *Ptelea* Linnaeus

Pteridophyllaceae Sugiura (1940) ex Nakai, Ord. Fam. etc. App. 240. 1943.
T.: *Pteridophyllum* Sieber et Zuccarini

Pterisanthaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 268. 1858 (*'Pterisantheae'*).
T.: *Pterisanthes* Blume

Pterocaryaceae Nakai, Hisi-Syokubutu 51. 1930 (ex Nakai, Ord. Fam. etc. 37. 1943).
T.: *Pterocarya* Kunth

Pterostemonaceae Small, N. Amer. Fl. 22: 183. 1905.
T.: *Pterostemon* Schauer

Punicaceae Horaninow, Prim. Lin. Syst. Nat. 81. 1834.
T.: *Punica* Linnaeus

Putranjivaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 301. 1858 (*'Putranjiveae'*).
T.: *Putranjiva* Royle

Pyrenaceae Ventenat, Tabl. Regne Vég. 2: 315. 1799 (nom. illeg.; fam. heterogen. incl. *Verbenaceae* etc.).

Pyrolaceae Lindley, Nat. Syst. 184. 1830 (nom. cons. prop. vs. *Monotropaceae*).
T.: *Pyrola* Linnaeus

Q

Quercaceae A. de Jussieu, Dict. Sc. Nat. 2 (Suppl.): 12. 1816 (*'Quercineae'*).
T.: *Quercus* Linnaeus

Quiinaceae Engler in Martius, Fl. Bras. 12(1): 476. 1888.
T.: *Quiina* Aublet

Quillajaceae D. Don, Edinburgh New Phil. Journ. 10: 229. 1831 (*'Quillajeae'*).
T.: *Quillaja* Molina

R

Rafflesiaceae Dumortier, Anal. Fam. Pl. 13. 1829.
T.: *Rafflesia* R. Brown

Ranunculaceae A. L. de Jussieu, Gen. Pl. 231. 1789.
T.: *Ranunculus* Linnaeus

Rapateaceae Dumortier, Anal. Fam. Pl. 60. 1829.
T.: *Rapatea* Aublet

Raphanaceae Horaninow, Char. Ess. Fam. Regni Veg. 169. 1847 (nom. alt. illeg. syn. *Cruciferae* et *Brassicaceae*).
T.: *Raphanus* Linnaeus

Reaumuriaceae Ehrenberg, Ann. Sc. Nat. 12: 78. 1827 (*'Reaumurieae'*).
T.: *Reaumuria* Linnaeus

Resedaceae S. F. Gray, Arr. Brit. Pl. 2: 665. 1821.
T.: *Reseda* Linnaeus

Restionaceae R. Brown, Prodr. 1: 243. 1810 (*'Restiaceae'*).
T.: *Restio* Linnaeus

Retziaceae Bartling, Ord. Nat. Pl. 192. 1830 (in obs.).
T.: *Retzia* Linnaeus

Rhamnaceae A. L. de Jussieu, Gen. Pl. 376. 1789 ('*Rhamni*').
T.: *Rhamnus* Linnaeus

Rhinanthaceae Ventenat, Tabl. Regne Vég. 2: 295. 1799 (nom. illeg. vs. *Pedicul*ariaceae).
T.: *Rhinanthus* Linnaeus

Rhizoboleae De Candolle, Prodr. 1: 599. 1824 (nom. rej. prop. vs. *Caryocaraceae*).
T.: *Caryocar* Linnaeus (syn. *Rhizobolus* Schreber)

Rhizophoraceae R. Brown in Flinders, Voy. Terra Austr. 2: 549. 1814 ('*Rhizophoreae*').
T.: *Rhizophora* Linnaeus

Rhododendraceae A. L. de Jussieu, Gen. Pl. 158. 1789 ('*Rhododendra*').
T.: *Rhododendron* Linnaeus

Rhodolaenaceae Bullock, Kew Bull. 1957: 410. 1958 (nom. nov. vs. *Chlaenaceae*, nom. illeg.).
T.: *Rhodolaena* Thouars

Rhodoleiaceae Nakai, Ord. Fam. etc. App. 246. 1943.
T.: *Rhodoleia* J. D. Hooker

Rhodoraceae Ventenat, Tabl. Regne Vég. 2: 449. 1799 (nom. illeg. vs. *Rhododendraceae*).
T.: *Rhododendron* Linnaeus (syn. *Rhodora* Linnaeus)

Rhodotypaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 172. 1858 ('*Rhodotypeae*').
T.: *Rhodotypos* Sieber et Zuccarini

Rhoipteleaceae Handel-Mazzetti, Repert. Sp. Nov. 30: 75. *t. 127-128.* 1932.
T.: *Rhoiptelea* Handel-Mazzetti

Rhopalocarpaceae W. B. Hemsley in Hooker, Ic. Pl. 28: *sub t. 2774.* 1903.
T.: *Rhopalocarpus* Bojer

Rhynchothecaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 205. 1858 ('*Rhyncotheceae*').
T.: *Rhynchotheca* Ruiz et Pavon

Ribesieae A. Richard, Bot. Med. 2: 487. 1823 (nom. illeg. ≡ *Grossulariaceae*).
T.: *Ribes* Linnaeus

Ritroneae Hoffmansegg et Link, Fl. Port. 2: 98. 1820 (nom. illeg.).
T.: *Echinops* Linnaeus

Rivineae Agardh, Aphor. Bot. 218. 1825 (nom. illeg. vs. *Phytolaccaceae*).
T.: *Rivina* Linnaeus

Ropalocarpaceae; vide *Rhopalocarpaceae.*

Roridulaceae Engler et Gilg, Syll. Pflanzenfam. ed. 9-10. 226. 1924.
T.: *Roridula* Linnaeus

Rosaceae A. L. de Jussieu, Gen. Pl. 334. 1789.
T.: *Rosa* Linnaeus

Rousseaceae Endlicher, Ench. Bot. 411. 1841.
T.: *Roussea* J. E. Smith

Roxburghiaceae Wallich, Pl. As. Rar. 3: 50. *t. 282.* 1832.
T.: *Stemona* Loureiro (syn. *Roxburghia* Roxburgh).

Rubiaceae A. L. de Jussieu, Gen. Pl. 196. 1789.
T.: *Rubia* Linnaeus

Rumicaceae Dumortier, Anal. Fam. Pl. 15. 1829 ('*Rumicineae*').
T.: *Rumex* Linnaeus

Ruppiaceae J. Hutchinson, Fam. Fl. Pl. 2: 48. 1934 (nom. cons. prop., non Horaninow, Prim. Lin. Syst. Nat. 46. 1834).
T.: *Ruppia* Linnaeus

Ruscaceae Sprengel, Anleit. ed. 2. 2(1): 223. 1817 ('*Ruscineae*').
T.: *Ruscus* Linnaeus

Rutaceae A. L. de Jussieu, Gen. Pl. 296. 1789.
T.: *Ruta* Linnaeus

S

Sabalaceae C. H. Schultz, Nat. Syst. Pflanzenr. 317. 1832 ('*Sabalineae*').
T.: *Sabal* Adanson

Sabiaceae Blume, Mus. Bot. Lugd.-Bat. 1: 368. 1851 (nom. cons. prop. vs. *Millingtoniaceae, Wellingtoniaceae* et *Meliosmeae*).
T.: *Sabia* Colebrooke

Sagaceae C. H. Schultz, Nat. Syst. Pflanzenr. 316. 1832 ('*Sagoineae*').
T.: *Metroxylon* Rottboellius (syn. *Sagus* Gaertner)

Salaxidaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 104. 1858 ('*Salaxideae*').
T.: *Salaxis* Salisbury

Salicaceae Mirbel, Élém. Phys. Vég. 2: 905. 1815 ('*Salicineae*').
T.: *Salix* Linnaeus

Salicariae A. L. de Jussieu, Gen. Pl. 330. 1789 (nom. rej. prop. vs. *Lythraceae*).
T.: *Lythrum* Linnaeus

Salicorniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 357. 1858 ('*Salicornieae*').
T.: *Salicornia* Linnaeus

Salisburiaceae Link, Handb. 2: 469. 1831 (nom. rej. prop. vs. *Ginkgoaceae*).
T.: *Ginkgo* Linnaeus (syn. *Salisburia* J. E. Smith, nom. illeg.)

Salsolaceae Moquin-Tandon in De Candolle, Prodr. 13(2): 41. 1849 (nom. illeg. vs. *Chenopodiaceae*).
T.: *Salsola* Gaertner

Salvadoraceae Lindley, Nat. Syst. ed. 2. 269. 1836.
T.: *Salvadora* Linnaeus

Sambucaceae Link, Handb. 1: 662. 1829 ('*Sambucinae*').
T.: *Sambucus* Linnaeus

Samolaceae Dumortier, Anal. Fam. Pl. 29. 1829 ('*Samolineae*').
T.: *Samolus* Linnaeus

Samydeae Ventenat, Mém. Inst. Paris 2: 149. 1807 (nom. rej. prop. vs. *Flacourtiaceae*).
T.: *Samyda* Linnaeus

Sanguisorbaceae Loiseleur, Man. Pl. Us. Indig. 2: 469. 1819 ('*Sanguisorbeae*').
T.: *Sanguisorba* Linnaeus

Sansevieriaceae Nakai, Ord. Fam. etc. App. 226. 1943.
T.: *Sansevieria* Thunberg

Santalaceae R. Brown, Prodr. 350. 1810.
T.: *Santalum* Linnaeus

Sapindaceae A. L. de Jussieu, Gen. Pl. 246. 1789 ('*Sapindi*').
T.: *Sapindus* Linnaeus

Saponaceae Ventenat, Tabl. Regne Vég. 3: 125. 1799 (nom. illeg. ≡ *Sapindaceae*).
T.: *Sapindus* Linnaeus

Sapotaceae A. L. de Jussieu, Gen. Pl. 151. 1789 ('*Sapotae*').
T.: *Achras* Linnaeus (syn. *Sapota* Miller)

Sarcophytaceae van Tieghem, Bull. Soc. Bot. France 43: 554. 1896.
T.: *Sarcophyta* Sparrmann

Sarcospermaceae Lam, Fl. Malesiana 4: 32. *f. 1.* 1948.
T.: *Sarcosperma* J. D. Hooker

Sarcostigmataceae van Tieghem, Bull. Soc. Bot. France 44: 113. 1897.
T.: *Sarcostigme* Wight et Arnott

Sarcothalamicae C. H. Schultz, Nat. Syst. Pflanzenr. 372. 1832 (nom. illeg.; fam. heterogen. incl. *Monimiaceae, Moraceae,* etc.).

Sargentodoxaceae Stapf, Bot. Mag. 151: *t. 9111-9112.* 1925.
T.: *Sargentodoxa* Rehder et E. H. Wilson

Sarmentaceae C. H. Schultz, Nat. Syst. Pflanzenr. 311. 1832 (non Ventenat, 1799; nom. illeg. incl. *Dioscoreaceae* et *Liliaceae* p.p.).

Sarmentaceae Ventenat, Tabl. Regne Vég. 3: 167. 1799 (nom. illeg. ≡ *Vitaceae*).
T.: *Vitis* Linnaeus

Sarraceniaceae Dumortier, Anal. Fam. Pl. 53. 1829 [De la Pylaie, Mém. Soc. Linn. Paris 6: 379. 1827 (sine nom.)].
T.: *Sarracenia* Linnaeus

Sarumaceae Nakai, Sylv. Kor. No. 21. 17. 1936 ('*Sarumataceae*'; nomen).
T.: *Saruma* Oliver

Sauraujeae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 110. 1858 (nom. rej. prop. vs. *Actinidiaceae*).
T.: *Saurauia* Willdenow

Saururaceae A. Richard, Nouv. Élém. Bot. ed. 4. 419. 1828 ('*Saurureae*').
T.: *Saururus* Linnaeus

Sauvagesiaceae Dumortier, Anal. Fam. Pl. 44. 1829.
T.: *Sauvagesia* Jacquin

Saxifragaceae A. L. de Jussieu, Gen. Pl. 308. 1789 ('*Saxifrageae*').
T.: *Saxifraga* Linnaeus

Scaevolaceae Lindley, Nat. Syst. 189. 1830 ('*Scaevoleae*').
T.: *Scaevola* Linnaeus, 1771 (*Lobelia* Adanson, 1763, non Linnaeus, 1753)

Scepaceae Lindley, Nat. Syst. ed. 2. 171. 1836.
T.: *Aporosa* Blume (syn. *Scepa* Lindley)

Scheuchzeriaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 44. 1858 (nom. cons. prop. vs. *Triglochinaceae*).
T.: *Scheuchzeria* Linnaeus

Schisandraceae G. Don, Gen. Syst. 1: 101. 1831 ('*Schizandriaceae*').
T.: *Schisandra* Michaux, nom. cons.

Schoepfiaceae van Tieghem, Bull. Soc. Bot. France 43: 549. 1896.
T.: *Schoepfia* Schreber

Scillaceae Lotsy, Vortr. Bot. Stammesg. 3(1): 741. 1911 (nom. illeg. vs. *Hyacinthaceae*).
T.: *Scilla* Linnaeus

Scitamineae R. Brown, Prodr. 1: 305. 1810 (nom. illeg. ≡ *Zingiberaceae*).
T.: *Zingiber* Boehmer, nom. cons.

Scleranthaceae Bartling in Bartling et Wendland, Beitr. Bot. 2: 153. 1825 ('*Scleranthae*').
T.: *Scleranthus* Linnaeus

Scorodocarpaceae van Tieghem, Bull. Soc. Bot. France 43: 565. 1896.
T.: *Scorodocarpus* Beccari

Scrophulariaceae A. L. de Jussieu, Gen. Pl. 117. 1789 ('*Scrophulariae*').
T.: *Scrophularia* Linnaeus

Scyphostegiaceae J. Hutchinson, Fam. Fl. Pl. 1: 229. *f. 168.* 1926.
T.: *Scyphostegia* Stapf

Scytopetalaceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 242. 1897.
T.: *Scytopetalum* Engler

Sebestenae Ventenat, Tabl. Regne Vég. 2: 380. 1799 (nom. rej. prop. vs. *Cordiaceae*).
T.: *Cordia* Linnaeus (syn. *Sebesten* Adanson)

Seguieriaceae Nakai, Journ. Jap. Bot. 18: 99. 1942.
T.: *Seguieria* Loefling

Selaginaceae Choisy, Mém. Fam. Sélag. 19. *t. 1*-5. 1823 ('*Selagineae*').
T.: *Selago* Linnaeus

Sempervivae A. L. de Jussieu, Gen. Pl. 307. 1789 (nom. rej. prop. vs. *Crassulaceae*).
T.: *Sempervivum* Linnaeus

Sesamaceae Horaninow, Prim. Lin. Syst. (nom. illeg. vs. *Pedaliaceae*).
T.: *Sesamum* Linnaeus

Sesuviaceae Horaninow, Prim. Lin. Syst. Nat. 83. 1834 (nom. illeg. vs. *Ficoidaceae*).
T.: *Sesuvium* Linnaeus

Sibthorpiaceae D. Don, Edinburgh New Phil. Journ. 19: 114. 1835.
T.: *Sibthorpia* Linnaeus

Silenaceae Bartling, Ord. Nat. Pl. 305. 1830 ('*Sileneae*').
T.: *Silene* Linnaeus

Simabaceae Horaninow, Char. Ess. Fam. Reg. Veg. 180. 1847 (nom. illeg.; fam. heterogen. incl. *Ochnaceae, Simaroubaceae, Staphyleaceae* et *Caryocaraceae*).

Simaroubaceae De Candolle, Ann. Mus. Hist. Nat. Paris 17: 422. 1811 ('*Simarubeae*').
T.: *Simarouba* Aublet

Simmondsiaceae van Tieghem, Journ. de Bot. 12: 103. 1898.
T.: *Simmondsia* Nuttall

Siphonandraceae Klotzsch, Linnaea 24: 13. 1851 (nom. illeg. syn. *Vacciniaceae*).
T.: *Siphonandra* Klotzsch

Siphonodontaceae Gagnepain et Tardieu, Not. Syst. 14: 102. 1951 (nom. cons. prop. vs. *Capusiaceae*).
T.: *Siphonodon* Griffith

Smilacaceae Ventenat, Tabl. Regne Vég. 2: 146. 1799 ('*Smilaceae*').
T.: *Smilax* Linnaeus

Solanaceae A. L. de Jussieu, Gen. Pl. 124. 1789 ('*Solaneae*').
T.: *Solanum* Linnaeus

Sonneratiaceae Engler in Engler et Prantl, Nat. Pflanzenfam. Nachtr. 261. 1897 (nom. cons. prop. vs. *Blattiaceae*).
T.: *Sonneratia* Linnaeus f., nom. cons.

Soulameaceae Endlicher, Ench. Bot. 570. 1841 ('*Soulameae*').
T.: *Soulamea* Lamarck

Sparganiaceae C. H. Schultz, Syst. Nat. Pflanzenr. 295. 1832 ('*Sparganioideae*').
T.: *Sparganium* Linnaeus

Sparmanniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 260. 1858.
T.: *Sparmannia* Linnaeus f., nom. cons., non Buc'hoz, nom. rej.

Sphaerosepalaceae van Tieghem, Journ. de Bot. 14: 53. 1900.
T.: *Sphaerosepalum* J. G. Baker ,

Sphenocleaceae Lindley, Nat. Syst. ed. 2. 238. 1836.
T.: *Sphenoclea* Gaertner, nom. cons.

Sphenostemonaceae? (vide Erdtman, Pollen Morph. and Pl. Tax. 413. 1952).
T.: *Sphenostemon* Baillon

Spielmanniaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 194. 1858 ('*Spielmannieae*').
T.: *Oftia* Adanson (syn. *Spielmannia* Medicus, non Jussieu)

Spigeliaceae Martius, Nov. Gen. et Sp. 2: 132. 1827.
T.: *Spigelia* Linnaeus

Spiraeaceae Bartling, Ord. Nat. Pl. 403. 1830.
T.: *Spiraea* Linnaeus

Spirolobae Link, Handb. 2: 442. 1831 (nom. illeg. ≡ *Koelreuteriaceae*).
T.: *Koelreuteria* Laxmann

Spondiaceae Kunth, Ann. Sc. Nat. 2: 362. 1824.
T.: *Spondias* Linnaeus

Stachyuraceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 152. 1858 ('*Stachyureae*').
T.: *Stachyurus* Sieber et Zuccarini

Stackhousiaceae R. Brown in Flinders, Voy. Terra Austr. 2: 555. 1814 ('*Stackhouseae*').
T.: *Stackhousia* J. E. Smith

Stapeliaceae Horaninow, Prim. Lin. Syst. Nat. 70. 1834 (nom. illeg. vs. *Asclepiadaceae*).
T.: *Stapelia* Linnaeus

Staphyleaceae Lindley, Syn. Brit. Fl. 75. 1829.
T.: *Staphylea* Linnaeus

Staticaceae S. F. Gray, Arr. Brit. Pl. 2: 295. 1821 ('*Staticinae*').
T.: *Limonium* Miller (nom. cons., syn. *Statice* Linnaeus, nom. rej.)

Stegnospermaceae Nakai, Journ. Jap. Bot. 18: 108. 1942.
T.: *Stegnosperma* Bentham

Stellariaceae Dumortier, Anal. Fam. Pl. 44. 1829 (nom. illeg. vs. *Caryophyllaceae*).
T.: *Stellaria* Linnaeus

Stemonaceae Franchet et Savatier, Enum. Pl. Jap. 2: 92. 1879 (nom. illeg. ≡ *Roxburghiaceae*).
T.: *Stemona* Loureiro

Stenomeridaceae J. G. Agardh, Theoria Syst. Pl. Phan. 66. 1858 ('*Stenomerideae*').
T.: *Stenomeris* Planchon

Sterculiaceae Ventenat, Jardin Malm. 2: *t. 91.* 1805.
T.: *Sterculia* Linnaeus

Stilaginaceae C. A. Agardh, Aphor. Bot. 199. 1825 ('*Stilagineae*').
T.: *Antidesma* Linnaeus (syn. *Stilago* Linnaeus, non *Stylago* Salisbury)

Stilbeaceae Kunth, Handb. Bot. 393. 1831 ('*Stilbineae*').*
T.: *Stilbe* Bergius

Strasburgeriaceae van Tieghem, Journ. de Bot. 17: 204. 1903.
T.: *Strasburgeria* Baillon

Stratiotaceae Link, Handb. 1: 280. 1829 ('*Stratioteae*').
T.: *Stratiotes* Linnaeus

Strelitziaceae J. Hutchinson, Fam. Fl. Pl. 2: 72. 1934.
T.: *Strelitzia* Aiton

Streptochaetaceae Nakai, Ord. Fam. etc. App. 222. 1943.
T.: *Streptochaeta* Schrader

Strombosiaceae van Tieghem, Bull. Soc. Bot. France 43: 566. 1896.
T.: *Strombosia* Blume

Strumariaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 126. 1866 ('*Strumareae*').
T.: *Strumaria* Jacquin

Strychnaceae Link, Handb. 1: 439. 1829.
T.: *Strychnos* Linnaeus

Stylidiaceae R. Brown, Prodr. 565. 1810 ('*Stylideae*').
T.: *Stylidium* Swartz, nom. cons.

Stylobasiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 169. 1858 ('*Stylobasieae*').
T.: *Stylobasium* Desfontaines

Styphel iaceae Horaninow, Prim. Lin. Syst. Nat. 72. 1834 (nom. illeg. vs. *Epacridaceae*).
T.: *Styphelia* J. E. Smith

Styracaceae A. Richard, Nouv. Élém. Bot. ed. 4. 474. 1828 ('*Styraceae*').
T.: *Styrax* Linnaeus

Surianaceae Arnott in Wight et Arnott, Prodr. Fl. Penins. Ind. Or. 360. 1834 ('*Surianeae*').
T.: *Suriana* Linnaeus

Swartziaceae Bartling, Ord. Nat. Pl. 413. 1830 ('*Swartzieae*').
T.: *Swartzia* Schreber, nom. cons., non Ehrhart, nec *Swartsia* Gmelin, nom. rej.

Sycoideae Link, Handb. 1: 292. 1829 (nom. illeg.; syn. *Ficaceae* et incl. *Artocarpaceae*).
T.: *Ficus* Linnaeus

Symphoniaceae Presl, Symb. Bot. 1: 71. 1832 (nom. rej. prop. vs. *Clusiaceae*).
T.: *Symphonia* Linnaeus f.

Symphoremataceae van Tieghem, Journ. de Bot. 12: 359. 1898.
T.: *Symphorema* Roxburgh

Symplocaceae D. Don, Prodr. Fl. Nepal. 144. 1825 ('*Symplocineae*').
T.: *Symplocos* Jacquin

Synantherae Cassini, Op. Phyt. 1: 5. 1826 (nom. illeg. ≡ *Compositae* vel *Asteraceae*).
T.: *Aster* Linnaeus

Syngeneticae Horaninow, Char. Ess. Fam. Regni Veg. 88. 1847 (nom. illeg. ≡ *Compositae* et *Asteraceae*).

Syringaceae Horaninow, Char. Ess. Fam. Regni Veg. 115. 1847 (nom. illeg. vs. *Oleaceae*, nom. cons. prop.).
T.: *Syringa* Linnaeus

T

Taccaceae Dumortier, Anal. Fam. Pl. 57. 1829 ('*Tacceae*').
T.: *Tacca* J. R. et G. Forster, nom. cons.

Tamaceae S. F. Gray, Arr. Brit. Pl. 2: 189. 1821.
T.: *Tamus* Linnaeus

Tamaricaceae S. F. Gray, Arr. Brit. Pl. 2: 554. 1821 ('*Tamaricinae*').
T.: *Tamarix* Linnaeus

Tecophilaeaceae Leybold, Bonplandia 10: 370. 1862.
T.: *Tecophilaea* Colla

Telephiaceae Link, Handb. 2: 45. 1831.
T.: *Telephium* Linnaeus

Terebinthaceae A. L. de Jussieu, Gen. Pl. 368. 1789 (nom. rej. prop. vs. *Anacardiaceae* et *Pistaciaceae*).
T.: *Pistacia* Linnaeus

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*) The place and date of publication of the fungus family *Stilbaceae*, based upon *Stilbum* Fries, has not been determined. — A. A. B.

Terminaliaceae Jaume St. Hilaire, Exp. Fam. 1: 178. *t.* 29. 1805 (nom. rej. prop. vs. *Combretaceae*).
T.: *Terminalia* Linnaeus, nom. cons., non *Terminalis* Kuntze, nom. rej.
Ternstroemieae Mirbel, Bull. Soc. Philom. 3: 381. 1813 (nom. rej. vs. *Theaceae*).
T.: *Ternstroemia* Linnaeus f., nom. cons.
Tetracarpaeaceae Nakai, Ord. Fam. etc. App. 244. 1943.
T.: *Tetracarpaea* W. J. Hooker
Tetracentraceae van Tieghem, Journ. de Bot. 14: 355, 361. 1900.
T.: *Tetracentron* Oliver
Tetrachondraceae Skottsberg, Bot. Jahrb. 48. Beibl. 107: 23-26. 1912.
T.: *Tetrachondra* Oliver
Tetragoniaceae Link, Handb. 2: 17. 1831.
T.: *Tetragonia* Linnaeus
Tetrameristaceae J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Tetramerista* Miquel
Tetrastylidiaceae van Tieghem, Bull. Soc. Bot. France 43: 565. 1896.
T.: *Tetrastylidium* Engler
Thalassiaceae Nakai, Ord. Fam. etc. App. 210. 1943.
T.: *Thalassia* Konig
Theaceae Mirbel, Bull. Soc. Philom. 3: 381. 1813 (nom. lect. vs. *Ternstroemiaceae*, vide D. Don, 1825).
T.: *Thea* Linnaeus
Theligonaceae Dumortier, Anal. Fam. Pl. 15. 1829 (*'Theligoneae'*).
T.: *Theligonum* Linnaeus
Themidaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 84. 1866 (*'Themideae'*).
T.: *Brodiaea* J. E. Smith, nom. cons. (syn. *Themis* Salisbury)
Theobromaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 264. 1858 (*'Theobromeae'*).
T.: *Theobroma* Linnaeus
Theophrastaceae G. Don, Gen. Syst. 4: 24. 1838 (*'Theophrasteae'*).
T.: *Theophrasta* Linnaeus
Thismiaceae Miquel, Fl. Ind. Bat. 3: 615. 1858.
T.: *Thismia* Griffith
Thunbergiaceae van Tieghem, Ann. Sc. Nat. ser. 9. 7: 20. 1908.
T.: *Thunbergia* Retzius, nom. cons., non Montin, nom. rej.
Thurniaceae Engler, Syll. Pflanzenfam. ed. 5. 94. 1907.
T.: *Thurnia* J. D. Hooker
Thymelaeaceae A. L. de Jussieu, Gen. Pl. 76. 1789 (*'Thymelaeae'*).
T.: *Thymelaea* Endlicher, nom. cons. (syn. *Daphne* Linnaeus, p.p.)
Tiliaceae A. L. de Jussieu, Gen. Pl. 289. 1789.
T.: *Tilia* Linnaeus
Tillandsiaceae A. de Jussieu, Cours Élém. Hist. Nat. Bot. *tabl.* 3 (p. 424). 1843 (*'Tillandsieae'*).
T.: *Tillandsia* Linnaeus
Tithymaloideae Ventenat, Tabl. Regne Vég. 3: 483. 1799 (nom. illeg. ≡ *Euphorbiaceae*).
T.: *Euphorbia* Linnaeus
Tovariaceae Pax in Engler et Prantl, Nat. Pflanzenfam. 3(2): 207. 1891.
T.: *Tovaria* Ruiz et Pavon, nom. cons., non Necker, nom. rej.
Torreyaceae Nakai, Tjosen Sanrin Kwaiho, No. 158. 43. 1938.
T.: *Torreya* Arnott, nom. cons., non Rafinesque, nec Sprengel
Trapaceae Dumortier, Anal. Fam. Pl. 36. 1829.
T.: *Trapa* Linnaeus
Trapellaceae Li, Journ. Washington Acad. Sc. 44: 12. 1954.
T.: *Trapella* Oliver
Tremandraceae De Candolle, Prodr. 1: 343. 1824 (*'Tremandreae'*; nom. cons. prop. vs. *Tremandreae* R. Brown, 1814, nom. illeg.).
T.: *Tremandra* De Candolle
Tremandreae R. Brown in Flinders, Voy. Terra Austr. 2: 544. 1814 (nom. [illeg.] rej. prop. vs. *Tremandraceae*).
T.: *Tetratheca* J. E. Smith
Treubellaceae van Tieghem, Bull. Soc. Bot. France 44: 105. 1897.
T.: *Treubana* van Tieghem (syn. *Treubella* van Tieghem, non Pierre)
Treviaceae Lindley, Nat. Syst. ed. 2. 174. 1836 (*'Trewiaceae'*).
T.: *Trevia* Linnaeus (orth. mut. *Trewia* auctt.)
Trichopodaceae J. Hutchinson, Fam. Fl. Pl. 2: 143. *f.* 55. 1934.
T.: *Trichopus* Gaertner
Triglochineae Dumortier, Anal. Fam. Pl. 59. 1829 (nom. rej. prop. vs. *Scheuchzeriaceae*).
T.: *Triglochin* Linnaeus
Trigoniaceae Endlicher, Gen. Pl. 1080. 1839; Endlicher, Ench. Bot. 570. 1841.
T.: *Trigonia* Aublet
Trilliaceae Lindley, Veg. Kingd. 218. 1846 (nom. cons. prop. vs. *Paridaceae*).
T.: *Trillium* Linnaeus

Trimeniaceae Gibbs, Phytogeogr. Fl. Arfak Mts. 135. 1917.
T.: *Trimenia* Seemann
Triplochitonaceae K. Schumann, Bot. Jahrb. 28: 331. 1900.
T.: *Triplochiton* K. Schumann, nom. cons.
Tripterelleae Dumortier, Anal. Fam. Pl. 54. 1829 (nom. illeg. ≡ *Burmanniaceae*).
T.: *Burmannia* Linnaeus (syn. *Tripterella* Michaux)
Triuridaceae Gardner, Trans. Linn. Soc. London 19: 16. *t. 15.* 1843 (*'Triuraceae'*).
T.: *Triuris* Miers
Trochodendraceae Seemann, Journ. Bot. 2: 238. 1864 (*'Trochodendreae'*).
T.: *Trochodendron* Sieber et Zuccarini
Tropaeolaceae De Candolle, Prodr. 1: 683. 1824 (*'Tropaeoleae'*).
T.: *Tropaeolum* Linnaeus
Tulbaghiaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 87. 1866 (*'Tulbagheae'*).
T.: *Tulbaghia* Linnaeus, nom. cons., non Heister, nom. rej.
Tulipaceae Horaninow, Prim. Lin. Syst. Nat. 53. 1834 (nom. illeg. vs. *Liliaceae*).
T.: *Tulipa* Linnaeus
Tulipiferae Ventenat, Tabl. Regne Vég. 3: 68. 1799 (nom. illeg. ≡ *Magnoliaceae*).
T.: *Magnolia* Linnaeus
Tumboaceae Wettstein, Handb. Syst. Bot. 158. 1903 (nom. rej. prop. vs. *Welwitschiaceae*).
T.: *Welwitschia* J. D. Hooker, nom. cons. vs. *Tumboa* Welwitsch, nom. rej.
Turneraceae De Candolle, Prodr. 3: 345. 1828.
T.: *Turnera* Linnaeus
Typhaceae A. L. de Jussieu, Gen. Pl. 25. 1789 (*'Typhae'*).
T.: *Typha* Linnaeus

U

Ullucaceae Nakai, Journ. Jap. Bot. 18: 109. 1942.
T.: *Ullucus* Caldas
Ulmaceae Mirbel, Élém. Phys. Vég. 2: 905. 1815.
T.: *Ulmus* Linnaeus
Ulmariaceae S. F. Gray, Arr. Brit. Pl. 2: 588. 1821 (*'Ulmariae'*).
T.: *Spiraea* Linnaeus (syn. tax. *Ulmaria* Hill)
Umbelliferae A. L. de Jussieu, Gen. Pl. 218. 1789 (nom. cons. alt. cum *Apiaceae*).
T.: *Apium* Linnaeus
Urticaceae A. L. de Jussieu, Gen. Pl. 400. 1789 (*'Urticae'*).
T.: *Urtica* Linnaeus
Utriculinae Hoffmansegg et Link, Fl. Port. 1: 337. 1809 (nom. illeg. ≡ *Lentibulariaceae*).
T.: *Utricularia* Linnaeus
Uvulariaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 58. 1866 (*'Uvulareae'*).
T.: *Uvularia* Linnaeus

V

Vacciniaceae S. F. Gray, Arr. Brit. Pl. 2: 404. 1821 (*'Vaccinieae'*).
T.: *Vaccinium* Linnaeus
Vahliaceae Dandy in J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined.
T.: *Vahlia* Thunberg
Valerianaceae Lamarck et De Candolle, Fl. Franç. ed. 3. 4: 232. 1805 (*'Valerianeae'*).
T.: *Valeriana* Linnaeus
Vallisneriaceae Dumortier, Anal. Fam. Pl. 54. 1829; Link, Handb. 1: 281. 1829.
T.: *Vallisneria* Linnaeus
Vanillaceae Lindley, Key Struct. Phys. Syst. Bot. 73. 1835.
T.: *Vanilla* Miller
Velloziaceae Endlicher, Ench. Bot. 101. 1841 (*'Vellozieae'*).
T.: *Vellozia* Vandelli
Veratreae C. A. Agardh, Aphor. Bot. 166. 1822 (nom. illeg. vs. *Melanthiaceae*).
T.: *Veratrum* Linnaeus
Verbenaceae A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 7: 64. 1806 (nom. cons. prop. vs. *Vitices*).
T.: *Verbena* Linnaeus
Verniceae Link, Handb. 2: 123. 1831 (nom. illeg., fam. heterogen. incl. *Anacardiaceae* et *Burseraceae*).
Veronicaceae Horaninow, Char. Ess. Fam. Regni Veg. 119. 1847 (nom. illeg. vs. *Scrophulariaceae*).
T.: *Veronica* Linnaeus
Viburnaceae Dumortier, Anal. Fam. Pl. 29. 1829 (*'Viburnideae'*).
T.: *Viburnum* Linnaeus
Viciaceae Dostál, Květena Čsr. 717. 1948 (nom. illeg. vs. *Fabaceae* vel *Papilionaceae*).
T.: *Vicia* Linnaeus
Vincae S. F. Gray, Arr. Brit. Pl. 2: 342. 1821 (nom. illeg. vs. *Apocynaceae*).
T.: *Vinca* Linnaeus
Violaceae Lamarck et De Candolle, Fl. Franç. ed. 3. 5: 801. 1805.
T.: *Viola* Linnaeus

Viscaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 114. 1858.
T.: *Viscum* Linnaeus

Vitaceae A. L. de Jussieu, Gen. Pl. 267. 1789 ('*Vites*').
T.: *Vitis* Linnaeus

Vitices A. L. de Jussieu, Gen. Pl. 106. 1789 (nom. rej. prop. vs. *Verbenaceae*); Link, Handb. 1: 446. 1829.
T.: *Vitex* Linnaeus

Vivianiaceae Klotzsch, Linnaea 10: 433. 1836.
T.: *Viviania* Cavanilles

Vochysiaceae A. St. Hilaire, Mém. Mus. Hist. Nat. Paris 6: 253, 265. 1820 ('*Vochisieae*').
T.: *Vochysia* Poiret, nom. cons.

W

Wellingtoniaceae Meisner, Pl. Vasc. Gen. 2: 207. 1836-1843 (nom. illeg. vs. *Millingtoniaceae;* nom. rej. prop. vs. *Sabiaceae*).
T.: *Meliosma* Blume (syn. *Wellingtonia* Meisner et *Millingtonia* Roxburgh, non Linnaeus f.)

Welwitschiaceae Markgraf in Engler [et Prantl], Nat. Pflanzenfam. ed. 2. 13: 419. 1926 (nom. cons. prop. vs. *Tumboaceae*).
T.: *Welwitschia* J. D. Hooker, nom. cons. vs. *Tumboa* Welwitsch, nom. rej.

Willughbeiaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 256. 1858 ('*Willughbejieae*').
T.: *Willughbeia* Roxburgh

Winteraceae Lindley, Nat. Syst. ed. 2. 17. 1836.
T.: *Pseudowintera* Dandy (syn. *Wintera* J. R. et G. Forster, non Murray)

Wolffiaceae Nakai, Ord. Fam. etc. App. 214. 1943.
T.: *Wolffia* Schleiden

X

Xanthophyllaceae Gagnepain in Lecomte, Fl. Gén. Indo-Chine 1: 242. 1909.
T.: *Xanthophyllum* Roxburgh

Xanthorrhoeaceae Dumortier, Anal. Fam. Pl. 60. 1829.
T.: *Xanthorrhoea* J. E. Smith

Xanthoxylaceae Nees et Martius, Verh. Leop.-Carol. Akad. Naturf. 11: 183. 1823 (orth. mut. *Zanthoxylaceae,* q.v.).

Xerotaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 7. 1858 ('*Xerotideae*').
T.: *Xerotes* R. Brown

Ximeniaceae van Tieghem, Bull. Soc. Bot. France 43: 565. 1896.
T.: *Ximenia* Linnaeus

Xiphidiaceae Dumortier, Anal. Fam. Pl. 59. 1829 ('*Xiphineae*').
T.: *Xiphidium* Loefling

Xyridaceae C. A. Agardh, Aphor. Bot. 158. 1823 ('*Xyrideae*').
T.: *Xyris* Linnaeus

Y

Yuccaceae J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 8. 1858.
T.: *Yucca* Linnaeus

Z

Zannichelliaceae Dumortier, Anal. Fam. Pl. 59. 1829.
T.: *Zannichellia* Linnaeus

Zanoniaceae Dumortier, Anal. Fam. Pl. 28. 1829.
T.: *Zanonia* Linnaeus

Zanthoxylaceae Nees et Martius, Verh. Leop.-Carol. Akad. Naturf. 11: 183. 1823 ('*Xanthoxyleae*').
T.: *Zanthoxylum* Linnaeus

Zephyranthaceae Salisbury, Gen. Pl. (ed. J. E. Gray) 133. 1866 ('*Zephyrantheae*').
T.: *Zephyranthes* Herbert

Zingiberaceae Lindley, Nat. Syst. ed. 2. 322. 1836 (nom. cons. prop. vs. *Amomeae*).
T.: *Zingiber* Boehmer, nom. cons.

Zosteraceae Dumortier, Anal. Fam. Pl. 65. 1829.
T.: *Zostera* Linnaeus

Zygophyllaceae R. Brown in Flinders, Voy. Terra Austr. 545. 1814 ('*Zygophylleae*').
T.: *Zygophyllum* Linnaeus

SPECIES PLANTARUM

A new facsimile

Carl Linnaeus, Species Plantarum, A facsimile of the first edition 1753; Volume I, with an introduction by W. T. Stearn, London, printed for the Ray Society, sold by Bernard Quaritch Ltd, 11 Grafton Street, London W. 1. 1957 [£ 2.10.—].

To volume one of this new facsimile edition has been added an extensive historical and bibliographical introduction by W. T. Stearn. An explanation of Linnaean abbreviations by J. L. Heller and an index to both genera and species will be added to volume 2.

Mr. Stearn's introduction gives a wealth of information on Linnaeus and his works in relation to the Species Plantarum, on the typification of Linnaean genera and species, on the Hortus Cliffortianus, on the Linnaean herbaria, etc. etc.

REQUEST

Where can I get a few small branches with leaves and flowers of *Thymus heterotrichus Grieseb.*? I need these urgently for taxonomic work, done a graduate student of the Dept. of Biology, Philadelphia College of Pharmacy & Science, Philadelphia 4, Pa. U.S.A.

Th. Ph. Haas

REGIONAL TREASURERS

Brazil: Dr J. Angely, Instituto Paranaense de Botânica, Caixa Postal 1362, Curitiba, Parana.

Belgium: Prof. W. Robyns, Rijksplantentuin, 236 Koninklijke Straat, Brussel.

Canada: Prof. J. Rousseau, 5208 Côte Saint-Antoine, Montréal, Qué.

Cuba: Prof. A. Ponce de León y Aymé, Jardin Botânico de la Universidad de la Habana, Carlos III e Infanta, Habana, Cuba.

Egypt: Mr Mohammed Drar, The Agricultural Museum, Dokki, Cairo.

France: M. H. Jacques-Felix, 25 rue St. Quentin, Nogent-sur-Marne, Seine. C.C.P. Paris 2243-12.

Germany: Dr Walter Domke, Staatsinstitut für Allgemeine Botanik, Jungiusstrasse 6, Hamburg 36.

Great Britain and British Commonwealth except Canada: Mr R. Ross, British Museum (Nat. Hist.), Cromwell Road, London S.W. 7, Great Britain.

Netherlands: The International Bureau for Plant Taxonomy and Nomenclature, Lange Nieuwstraat 106, Utrecht. Bankers: Messrs Vlaer & Kol, Utrecht, giro 7247.

Norway: Prof. K. Faegri, Universitet I Bergen, Botanisk Museum, Bergen.

Sweden: Mr Bo Peterson, Botaniska Museet, Lund. Postgiro 43.35.39.

U.S.A.: Dr R. C. Rollins, Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.
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SO WHAT IS A TAXON?

H. W. Rickett (New York)

The word embodies the primary concept of taxonomy and is found in the writings of all taxonomists; yet it still lacks a definition and is subject to misconstruction. This is surely evidence of some lack of precision in taxonomic thought. I admit to having been startled and a bit confused by Dr. Morton's article (Rhodora 59: 43; reprinted in Taxon 6: 155). Now Dr. Lam (Taxon 6: 213) does not help me very much.

Morton says: "Taxon ... denotes *any* nomenclatural category." So it does: it *denotes* a category, in the quoted Article of the Code; which is to say, it indicates, it points out, it refers to a category. But *it is not itself* a category, as we use that term taxonomically. What is a category? It is a word notoriously difficult to define. Roughly it means a concept, a class of things or ideas. The concept "species" is a category; "genus" is another; this at least seems to be the sense of "categories" in Article 4 of the Code; also in Article PB 6A of Appendix II. But one individual species — named, for instance, *Quercus robur* — is not, I hope, wholly conceptual. It is not an abstraction, except as all scientific data are abstractions from the raw material of our senses. It is composed of plants, distributed in space and time, having what we call objective reality; it is a population; if it is not this it is nothing. A genus — *Quercus* — also has some degree of objectiveness, so far as it is considered to be composed of species. Likewise a leaf is not a category, in our sense, though it exemplifies a number of categories. I have not here taken sufficient pains to provide exact philosophical meanings for the terms I am using. But unless we can distinguish between the concept "species," a category of taxonomic groupings, and the individual species which that concept embraces, then all our code of nomenclature is nonsense.

So what is a taxon? As Morton says, the word was introduced to replace the more cumbersome "taxonomic group" in the Code; that is quite clear. (It should also replace the "entity" of much recent writing, this word being much more difficult to define and having philosophical connotations quite foreign to taxonomic thought.) The old Rules (ed. 3) referred, for instance, to "an alteration of the diagnostic characters ... of a group" (the word "taxonomic" is to be understood, and "group" has been replaced by "taxon" in the current Code). To what can such words refer if not to an objectively understood collection of plants grouped together on the basis of common characteristics? Any group is in a certain sense, of course, a concept, since some one has selected the particular characteristics which make it a group. But when we mention a taxonomic group, *a taxon*, we are not speaking of the concept "group" but of a particular group. *And this group has characteristics.* It has leaves, it has a certain distribution ... If this is not true then all our manuals

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and floras should be thrown away. Again: "A name of a taxonomic group must be rejected . . ." This does not mean that the word "group" must be rejected, or the word "species," or the name of any other concept; it means the name of a certain assemblage of plants — an abstraction if you like, but embracing real plants having certain characteristics (as leaves) in common. This is *a taxon*, one of the objective realities with which taxonomy deals.

"To use the word [taxon] to mean plants, populations, races, species . . . is to debase it and to turn it into a meaningless catch-all." Well, perhaps to call a single plant a taxon would strain the sense a bit; I have not noticed such usage by a taxonomist. But if a particular species (not the category "species") is a taxon, why then you must recognize that a population is — or may be — a taxon. And if a particular variety is a taxon, and a particular form, why not a particular race?

But is this interpretation contrary to the intention of the botanist who introduced it to taxonomy? That I cannot say. But I was present when it was proposed at Utrecht and immediately adopted in place of the old "taxonomic group." And if it must now mean something different, then the Code must be rewritten. For, as I have shown above, the "taxonomic groups" of the Code were actual species and genera and families and so on.

Lam is now worried about what constitutes a "natural" group. "Any group of organisms with some common character . . . has some right to be called a natural group." Quite right: we can classify objects by any criteria we like. A group of botanists discussing the meaning of "taxon" do indeed form a group which *can* be called "natural." This word has been much misused, especially in modern writing. Botanists discussing the history of taxonomy will assure you that the "natural system" dates only from Darwin and the acceptance of a classification of organisms based on descent. They ignore the "natural system" sought by Linnaeus, de Jussieu, and other pre-evolutionists; "natural" meant something different to them. However, in modern taxonomy there is no dissent from a system based on evolution, and no disposition to use the word "natural" in any other sense than that of relatedness by descent. A taxon or taxonomic group, as taxonomists use such expressions, can mean only a group of organisms related genetically (or so related to the best of our knowledge).

If the foregoing remarks are correct, a taxon is not an abstraction, nor does it *include* the categories of taxonomic thought. It is a taxonomic group or assemblage of plants or animals, having certain characteristics in common which we take as evidence of genetic relationship, and possessed of some degree of objective reality. We can use the word wherever we can use "taxonomic group," in referring to the characteristics, dynamics, distribution, or uses of such an assemblage.

A PROPOSAL ON "DATE OF PUBLICATION"

H. W. Rickett (New York)

One of the preoccupations of taxonomists is the "date of publication" of printed matter. It is often difficult to discover, sometimes impossible; when it can be fixed, it may be valuable in establishing a stable nomenclature. Many modern publishers are careful to state on their covers or title-pages or elsewhere the date on which a book or an issue of a serial is published.

"The date of effective publication is the date on which the printed matter became available as defined in Art. 29." So runs Art. 30. The reference is apparently to the statement in Art. 29 that publication is effected "by distribution of printed matter

(through sale, exchange, or gift) ..." The date of valid publication is presumably the same as that of effective publication if all tests of validity are met. "When the various conditions for valid publication are not simultaneously fulfilled, the date is that on which the last is fulfilled" (Art. 45).

The date we want is therefore the date of "availability." A publication becomes "available" by "distribution." When is it distributed? When it reaches the hands of the persons to whom it is addressed or by whom it is purchased? If so, it would usually be impossible to determine the date and always impossible to state it in advance. The second sentence of Art. 30 would scarcely make sense: "In the absence of proof establishing some other date, the one appearing in the printed matter must be accepted as correct." Actually it would almost never be correct!

There has been a tendency at least in the United States to interpret "distribution" as delivery to the post office, since practically all botanical books and serials reach individuals through this channel. This interpretation is open to question, particularly in the light of recent experiences. Several American magazines have been plagued by excessive irregularity and lateness of delivery. One printer reports that a widely distributed garden periodical required 21 days to be delivered in a neighboring city, after leaving his place of business. At other times the same magazine moved promptly and reached its subscribers in a day or two. An investigator in another post office reported that magazines were piled up in packages and ignored for days in favor of other mail. What was the date of their distribution?

The printer quoted above, who prints several botanical serials, in spite of such facts holds that the date of distribution is the day the printed copies leave his hands. "This is the day [he writes] on which the contents of the journal became public property," and what happened afterwards did not affect that fact. Whether any one actually read it on that day or not, the work was then *available* for reading in printed form.

In spite of the obvious objections, I am inclined to agree with this view. An author can certainly be excused for assigning a name to a taxon which is antedated (in the above sense) by another name unfortunately marooned "in packages" somewhere in a post office. But the advantage of a fixed and usable interpretation of "date of publication" should outweigh the possibility of such unnecessary duplications and personal annoyances. At any rate, the matter should be discussed, to the end of getting a more precise meaning for "distribution" in the article cited. Accordingly I propose * that Art. 29 be modified, in the next edition of the *Code*, to provide that the availability of printed matter means its delivery by the printer to one of the usual carriers by which it is distributed to the public. The exact wording of the revised article may be left to the Editorial Committee.

ZUR NOMENKLATUR CHEMISCHER SIPPEN

R. Hegnauer (Leiden)

Vom 9.-11. September 1957 fand am I.V.T. (Instituut voor de Veredeling van Tuinbouwgewassen; Direktor Dr. O. Banga) zu Wageningen, Holland, eine internationale Arbeitstagung über Arznei- und Nutzpflanzenforschung statt, die durch Teilnehmer aus 16 Länder besucht wurde. Am zweiten Tage wurde das Thema "chemische Rassen" diskutiert. Der Ausdruck Rasse ist in diesem Zusammenhang als gleichbedeutend mit dem Ausdruck infraspecifische Sippe zu betrachten.

*) Proposal no. 20 submitted to the IXth International Botanical Congress, Montreal 1959.

Die eingegangenen Rapporte sowie die rege Diskussion brachten deutlich zum Ausdruck, daß man allgemein eine offizielle Nomenklatur der überwiegend chemisch charakterisierten Sippen begrüßen würde. Sowohl bei Wildpflanzen als auch bei Kulturpflanzen beobachtet man immer häufiger, daß morphologisch nicht oder nur wenig verschiedene Formen sich bezüglich der Inhaltsstoffe (oder bestimmter physiologischer Merkmale) auffallend unterscheiden. Da bei Arznei- und Nutzpflanzen chemische und physiologische Merkmale oft besonders wichtig sind, erscheint es erwünscht, der Erscheinung der infraspecifischen chemischen Differenzierung auch taxonomisch und nomenklatorisch Rechnung zu tragen.

Zum voraus waren Prof. Lanjouw, Utrecht, und Prof. Mansfeld, Gatersleben, um ihre Ansicht zu dieser Frage gebeten worden. Die durch die genannten Herren gemachten Vorschläge wurden auf der Tagung vorgelesen und besprochen. Ein dritter Vorschlag für die taxonomische und nomenklatorische Behandlung chemischer Rassen wurde während der Tagung durch Herrn P. Tétényi (Budapest) unterbreitet. Er schlug vor, chemisch charakterisierte Taxa durch die Vorsilbe *chemo* zu kennzeichnen (z.B. chemovar., chemoforma, chemocultivar, etc.). Aus der Überlegung, daß die Frage der taxonomischen Behandlung und Benennung von infraspecifischen chemischen Sippen nur durch die Mitarbeit der Taxonomen befriedigend gelöst werden kann, wurde der Unterzeichnete durch die Versammlung ersucht, das Problem in dieser Zeitschrift zur Diskussion zu stellen. Er möchte es nicht unterlassen, den Herren Lanjouw und Mansfeld namens der Versammlung für ihr Interesse und ihre Mitarbeit zu danken.

Proposition à propos de la nomenclature des races chimiques

Pierre Tétényi (Hungary)

L'expression "race chimique" renferme beaucoup de catégories différentes depuis les cultivars (cultigens) jusqu'aux sous-espèces, parfois même jusqu'aux espèces, comme dans le cas de *Valeriana*. Aussi les synonymes de cette expression sont-ils nombreux: "variété physiologique", "forme biochimique", etc.

Avant de créer une nomenclature reflétant mieux la réalité, il faut tenir compte de certaines exigences. La nomenclature doit d'abord exprimer qu'il y a un phénomène physiologique-chimique; elle doit pouvoir s'adapter en même temps aux races "naturelles" et aux races "artificielles", aux polyploides, aux races morphologiquement identiques mais différant par la qualité ou la quantité de matière active. Enfin, elle doit répondre aux exigences des botanistes, des chimistes, des horticulteurs et des sélectionneurs.

Je propose donc pour exprimer le phénomène physiologique, de dénommer ainsi les catégories infraspécifiques:

Chemoconvar (Chconv.)
Chemocultigrex (chg.)
Chemocultivar (chv.)

pour ce qui concerne les espèces cultivées et

Chemovar (chvar.)
Chemoforma (chf.)

dans le cas d'espèces *spontanées* *)

*) Par exemple, les différences de pigment anthocyanique donnent naissance à des *cultivars* pour l'horticulteur, à des *chemo*cultivars pour nous.

Nous pouvons classer nos races chimiques dans ces catégories d'après leur matière active caractéristique et même d'après le degré de différences et ressemblances morphologiques.

Par exemple, nous pouvons classer les races chimiques de *Cinnamomum camphora* Sieb. subsp. *formosana* Hirota en 6 *chemovars*:

chvar. *borneol*
chvar. *campher*
chvar. *cineol*
chvar. *linalool*
chvar. *safrol*
chvar. *sesquiterpen*;

puisque nous remarquons une assez grande différence de quantité dans le chvar. *linalool*, nous l'exprimons par 2 *chemoformas*: chf. 86% et chf. 71%.

Un autre exemple, parmi les plantes cultivées, est celui de *Cinchona ledgeriana* Moens. Nous pouvons classer ses 2 races chimiques comme *chemocultigrex*:

chg. *chinidin*
chg. *cinchonidin*

En employant la nomenclature proposée, il n'y a aucune difficulté pour classer les races chimiques autopolyploides. Ces races doivent être traitées comme des *chemocultigrex* nouveaux des *chemoconvars* originaux, en ajoutant le nombre de "n".

Par exemple, après les expériences de Deufel sur *Achillea millefolium* L., le même *chemoconvar* renferme 2 *chemocultigrex*:

chg. *proazulen* 2n
chg. *proazulen* 4n

Le cas des amphiploides naturels est plus difficile, parce que nous ne connaissons pas toujours l'origine des races chimiques. Sans se prononcer sur la sous-espèce, on peut exprimer la ploidie seule: *Chenopodium ambrosioides* L. chvar. *ascaridol* 8n, avec ses 2 *chenoformas*.

Ma proposition de nomenclature n'est certes rien de plus qu'un essai mais je pense qu'elle pourrait être un pas en avant et servir de base pour une discussion collective, jusqu'à ce que nous trouvions pour les races chimiques une dénomination vraiment scientifique.

Zur Frage der Behandlung nur physiologisch, aber nicht morphologisch verschiedener Sippen in der botanischen Systematik

R. Mansfeld (Gatersleben)

Das System der Pflanzen ist ein morphologisches, die Gruppenbildung gründet sich auf Merkmale der Gestalt, des äußeren und inneren Baues. Andere Merkmale, die den morphologischen gegenüber allgemein als physiologische bezeichnet werden können, werden zwar auch benutzt, spielen aber im ganzen gesehen doch eine sehr geringe Rolle. Es handelt sich dabei um Farben sowie Geschmacks- und Geruchsqualitäten; man kann also etwa sagen, daß bei der Systembildung mit den Sinnen feststellbare Merkmale verwendet werden. Es ist in mancher Hinsicht interessant, zu verfolgen, wie weit bisher im einzelnen physiologische Merkmale benutzt worden sind (z.B. Farben bei oberen Gruppen der Kryptogamen, bei den Phanerogamen nur bei Gruppen unterer Rangstufen, Bitterstoffe, besonders bei Kulturpflanzen, Farbstoffe bei Flechten, physiologisches Verhalten bei Bakterienarten usw.), darauf kann aber hier nicht eingegangen werden.

In neuerer Zeit sind nun physiologische Merkmale im Fortschritt der Botanik immer mehr hervorgetreten, vor allem durch die Entwicklung der Biochemie, aber

auch anderer Disziplinen (Fortpflanzungsbiologie; Photoperiodismus u.a.), Merkmale, die vielfach für die Nutzung der Pflanzen in verschiedenster Hinsicht sehr wichtig sind. Es hat sich gezeigt, daß oft innerhalb einer morphologisch nicht weiter aufteilbaren Sippe mehrere Sippen mit konstanten physiologischen Unterschieden existieren, die also nur mit physiologischen Methoden erkennbar sind. Damit entsteht die Frage, wie man solche Sippen in das System einordnen und kennzeichnen soll, ob sich dafür eine allgemeine Regelung empfiehlt oder ob man in verschiedenen Fällen verschieden verfahren sollte.

Die Internationalen Nomenklaturregeln, die praktisch wichtige technische Fragen der Systembildung regeln, berücksichtigen bisher allgemein nur die morphologischen Gruppen, geben Vorschriften für ihre Benennung und legen Termini für die Rangstufen der Gruppen fest. Nur in einem speziellen Fall sind dabei bisher physiologische Sippen erwähnt: für die physiologischen Rassen parasitischer Pilze wird empfohlen, sie als forma specialis unter die jeweiligen Arten zu stellen; sie müssen natürlich wie morphologische Sippen mit einem Namen belegt und durch eine Beschreibung ihres physiologischen Verhaltens charakterisiert werden.

Bei Sippen, die sich nur biochemisch, in Inhaltsstoffen unterscheiden, ist man bisher verschieden vorgegangen (Hinweise darauf hat mir E. Stahl gegeben):

Hegnauer hat vorgeschlagen, sie als forma biochimica zu kennzeichnen. Das würde dem in den Regeln empfohlenen Terminus forma specialis entsprechen. Mir scheinen beide Termini nicht praktisch brauchbar, weil sie aus zwei Wörtern bestehen.

Bei Cinnamomum camphora sind chemisch verschiedene Sippen innerhalb einer morphologischen Varietät als Subvarietäten (mit besonderen Namen) eingeordnet worden. Das dürfte sich nicht empfehlen, weil subvarietas lange schon für morphologische Untersippen von Varietäten verwendet wird.

Penfold u. andere führen neben einer bisher bekannten Pflanze, die sie als Typus bezeichnen (zu ergänzen wäre dabei: biochemischer Typus), morphologisch gleiche, aber chemisch verschiedene als var. A, var. B usw. auf. Dies Verfahren empfiehlt sich nach meiner Ansicht keinesfalls. Die Verwendung von Buchstaben statt Namen ist nach allen bisherigen Erfahrungen abzulehnen. Auch die Bezeichnung Typus ist nicht zweckmäßig. Der nomenklatorische Typus spielt in der Systematik eine sehr wichtige Rolle; in der Morphologie wird der Terminus ebenfalls schon verwendet.

Ich selbst habe kürzlich auf eine Anfrage hin vorgeschlagen, zur Kennzeichnung physiologischer Sippen einen Terminus zu wählen, der aus einem einzigen Wort besteht und schon aus der Wortbedeutung erkennen läßt, daß es sich um eine Sippe handelt, die gegenüber einer oder mehreren anderen keine gestaltlichen Unterschiede zeigt. Im Deutschen könnte man etwa Gleichform, Beiform oder Nebenform sagen, das ergäbe einen Terminus wie aequiforma, adforma oder griechisch isomorpha, homomorpha.

Inzwischen habe ich nochmals Veranlassung gehabt, mich mit der Frage zu befassen. Es scheint mir jetzt zweckmäßiger, ein allgemeines brauchbares Verfahren zu erwägen. Physiologisch verschiedene Sippen kann es innerhalb morphologischer Sippen verschiedener Rangstufen geben. Eine Sippe, die im morphologischen System als forma bewertet wird, kann mehrere chemisch verschiedene Sippen enthalten, es kann aber auch eine Varietät verschiedene physiologische Sippen enthalten ebenso wie eine morphologisch einheitliche Species oder Subspecies. Es empfiehlt sich daher, das Vorhandensein physiologischer Sippen innerhalb einer morphologischen gleich in der Rangstufenbezeichnung erkennbar zu machen. Der einfachste Weg dazu wäre wohl das Anfügen entsprechender Vorsilben. Es ergeben sich dann Termini wie aequiforma, aequivarietas, aequispecies oder isoforma, isovarietas, isospecies (die

Verwendung der gut passenden Vorsilbe con- ist nicht möglich, weil conspecies und convarietas schon benutzt werden als Termini für eine Gruppe von Spezies bezw. Varietäten). Die Bildung isoforma kann zwar als Bastardwort aus Silben verschiedener Sprachen philologisch beanstandet werden. Sie ließe sich dadurch begründen, daß alle morphologischen Rangstufen lateinisch benannt werden und die abweichende Bildung eben andersartige Sippen bezeichnet.

In der praktischen Anwendung gibt es zwei Möglichkeiten:

Man hat neben einer vorhandenen morphologischen Varietät eine oder mehrere Isovarietäten:

var. n, isovar. n_1, isovar. n_2 usw. (wobei n, n_1 ... irgendwelche Namen bedeuten), oder man teilt die morphologische Varietät in physiologische Sippen, also Isovarietäten, auf:

var. n

isovar. n, isovar. n_1, isovar. n_2 usw.

Der zweite Weg entspricht dem derzeit in den Regeln für die Behandlung morphologischer Sippen, die weiter aufgliedbar sind, vorgeschriebenen.

Entsprechend ergibt sich innerhalb einer forma eine Zerlegung in isoformae usw., innerhalb einer morphologisch monotypischen (einheitlichen) Species mehrere Isospecies.

Eine andere Frage ist die, ob man physiologische Sippen, die sich in verschiedenen physiologischen Eigenschaften unterscheiden, noch danach besonders kennzeichnen soll, also noch weitere Termini für Sippen mit chemischen Unterschieden, Unterschieden in ihrem Verhalten (im Stoffwechsel, in der Periodizität usf.) einführen soll. Mir scheint das sehr zweifelhaft, vor allem aus dem Grunde, weil es doch wohl sehr fraglich ist, ob man diese Eigenschaften von einander genügend abgrenzen kann. Sie dürften doch wenigstens zum Teil miteinander zusammenhängen. Auch bei morphologischen Gruppen macht man keine Unterschiede, ob sie sich auf Merkmale des äußeren oder inneren Baues gründen oder etwa Merkmale verschiedener Organe.

Im übrigen müßten die physiologischen Sippen jedenfalls wie die morphologischen Sippen behandelt werden, also mit Namen belegt und beschrieben werden. Eine gewisse Schwierigkeit bildet dabei die Frage der Typsierung, d.h. die Frage der eindeutigen Bindung des Names an die Sippe. Bei morphologischen Sippen geschieht diese Bindung letzten Endes immer durch die Bezugnahme auf bestimmtes konserviertes Material, was aber z.B. bei manchen Kryptogamen auch nicht allgemein möglich ist. Bei den physiologischen Sippen müßte wohl dafür die genaue Festlegung bestimmter Testverfahren eintreten.

On the nomenclature of chemical strains

J. Lanjouw (Utrecht)

The chemical strains or varieties formed in the wild should be treated as ordinary infraspecific units; they should be named, and the publication of the name should be accompanied by a latin diagnosis. The name may perhaps be derived from the latin name of the chemical substance in question. The latin description could very well be kept extremely short by stating that such and such a substance is present in the leaves, roots, etc. Another question is what rank should be attributed to these strains. In general I would give the rank of *forma* to those taxa that differ in one

respect only (the chemical substance) from the "normal" group. However, if there are more differentiating characters, one could use variety or subspecies.

If such strains exist only as cultivated plants and if they have arisen from cultivation, they should be treated as 'cultivars' (varieties) in the sense of the International Code for the Nomenclature of Cultivated Plants. Such cultivars receive a fancy-name (not a latin one), the publication of which should be accompanied by a description, which need not be latin.

It seems important to treat these chemical strains in a more or less official way: I am convinced that these chemical characters may prove of great value to taxonomy in general.

HISTORISCHE BEMERKUNGEN ZUM BEGRIFF DER SUBSPEZIES

Hans Peter Fuchs (Kölliken (AG.), Schweiz)

Das Problem der Umgrenzung und Definition der systematischen Einheiten innerhalb der beschreibenden Naturwissenschaften hat immer wieder Anlaß zu Diskussionen gegeben, und immer wieder wird versucht, allgemein anerkannte und anerkennbare Definitionen der einzelnen systematischen Begriffe zu finden, um dadurch eine Möglichkeit zu schaffen, die innerhalb der systematisch-taxonomischen Botanik beschriebenen Komplexe zu vereinheitlichen und in Vergleich zu setzen. Während die Begriffsumgrenzung der Unterart heute wohl allgemein als ziemlich eindeutig dahingehend umschrieben werden kann, daß mit Wettstein 1898: 32-33 oder Du Rietz 1930: 333-428 der Terminus der Subspezies als Bezeichnung von geographisch gegliederten, morphologisch schwächer differenzierten Rassen, welche durch gleitende, nicht hybridogene Uebergänge miteinander mehr oder weniger verbunden erscheinen, aufgefaßt wird (cf. et Rothmaler 1944: 4/12-13; Rothmaler 1954: 68-69; H. P. Fuchs 1954: 2; R. D. Meikle 1957: 102-105), scheinen die historischen Tatsachen, welche dem Unterartbegriff zugrunde liegen, kaum je eingehender gewürdigt worden zu sein. Da jedoch offensichtlich auch innerhalb der Terminologie der Frage nach der Priorität einige Bedeutung beizumessen sein dürfte, so mögen im Folgenden die Fragen nach der geschichtlichen Entwicklung des Begriffes der Unterart kurz dargelegt werden.

Allgemein übersehen — oder zum mindesten kaum irgendwo explicite dargelegt — scheint die Tatsache zu sein, daß sich der Begriff der Unterart bereits bei Linnaeus 1753 findet, wenngleich der große schwedische Systematiker den Terminus "Unterart" bzw. "Subspecies" an sich offenbar weder kannte noch verwendete. An und für sich scheint der Begriff der Unterart allerdings nicht mit der Linnaeus'schen Auffassung der Unteilbarkeit und Unwandelbarkeit der Arten, wie sie z.B. Linnaeus 1751: 99 § 157 mit den Worten: "Species tot enumeramus quot diversae formae in principio sunt creatae" darlegte, in Einklang zu stehen, doch weist bereits ein Vergleich der theoretischen Umschreibungen der systematischen Einheiten einerseits und der praktischen Behandlung der einzelnen Taxa bei Linnaeus anderseits eindeutig darauf hin, daß auch für Linnaeus die Arten offenbar doch nicht jene unteilbaren, von Anbeginn der Welt bestehenden Schöpfungen darstellten, als die sie Linnaeus 1737: p. 5, part. innum. "*ratio operis*", § 5 erklärte: "Species tot sunt, quot diversas formas ab initio produxit Infinitum Ens; quae deinde formae secundum generationis inditas leges produxere plures, at sibi semper similes, ut Species nunc nobis non sint plures, quam quae fuere ab initio." Bereits in dieser eben wiedergegebenen Beschreibung muß Linnaeus 1737: p. 5, part. innum. "*ratio operis*", § 5

nämlich die Varietäten aus dieser Betrachtung ausschließen, indem er fortfährt: "Ergo Species tot sunt, quot diversae formae seu structurae Plantarum, r e j e c t i s i s t i s, q u a e l o c u s v e l c a s u s p a r u m d i f f e r e n t e s (V a r i e t a t e s) e x h i b u i t [vom Verf. gesperrt], hodienum occurrunt." Was LINNAEUS theoretisch unter einer Varietät verstanden wissen wollte, ergibt sich aus der diesbezüglichen Umschreibung bei LINNAEUS 1751: 99, § 158: "Varietates tot sunt, quot differentes plantas ex ejusdem speciei semine sunt productae" und weiter unten "Varietas est planta mutata a causa accidentali: Climate, Solo, Calore, Ventis etc.: r e d u c i t u r i t a q u e i n s o l o m u t a t o" [vom Verf. gesperrt] und noch etwas weiter "Species varietatum sunt Magnitudo, Plenitudo, Crispatio, Color, Sapor, Odor." Wie aus dem an zweiter Stelle im Vorigen aufgeführten Passus deutlich wird, sind die LINNAEUS'schen Varietäten — wenigstens insoweit es sich um deren theoretische Umgrenzung handelt — wohl am ehesten mit den von WIDDER 1950: 328-329 vorgeschlagenen formae modificantes bzw. varietates modificantes zu parallelisieren. In der praktischen Anwendung erscheinen diese LINNAEUS'schen Varietäten mit griechischen Buchstaben bezeichnet, jedoch ohne einen ausdrücklichen Varietätennamen, meist mit einem oder mehreren Synonymhinweisen, wenngleich auch hier verschiedene Beispiele aufgeführt werden könnten, die darlegen, daß auch unter diesen eigentlichen Varietäten im LINNAEUS'schen Sinne oft gute Arten versteckt sind. Dabei mag an dieser Stelle lediglich auf die Darstellung von *Rauvolfia* L. 1753a: 208 non RUIZ & PAVON 1799: 26, t. 152 verwiesen sein, wo LINNAEUS 1753a: 208, n. 1 der Art *Rauvolfia tetraphylla* L. 1753a: 208, n. 1 die von ihm selbst später spezifisch abgetrennte *Rauvolfia canescens* L. 1762: 303, n. 2 als var. β ohne besonderen Namen (also als Varietät im LINNAEUS'schen, als forma bzw. varietas modificans im WIDDER'schen Sinne) anfügt.[1]) Daß neben diesen eigentlichen, auch der theoretischen Umschreibung bei LINNAEUS 1751: 99, § 158 — wenigstens im Prinzip — ent-

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[1]) Nach JACKSON 1912: 125 stellt der Typus im LINNAEUS'schen Herbar die später von JACQUIN 1760: 14, n. 1 als *R. nitida* JACQUIN bezeichnete Pflanze dar, sodaß auf Grund des Prioritätsprinzips der JACQUIN'sche Name zu Gunsten des LINNAEUS'schen fallen muß. Es mag an dieser Stelle außerdem auf die Tatsache aufmerksam gemacht sein, daß mit Ausnahme des Binomens *Rauvolfia tomentosa* JACQUIN 1760: 14, n. 2, welches zwar auch ohne Beschreibung, zum mindesten aber mit einem Hinweis auf eine solche (BROWNE 1756: 180, n. 1) veröffentlicht wurde, und deshalb als gültiger Name angesehen werden kann, die von JACQUIN 1760: 14 aufgeführten neuen Arten als nomina nuda publiziert wurden. Sowohl *Rauvolfia nitida* JACQUIN und *Rauvolfia hirsuta* JACQUIN als auch *Rauvolfia tomentosa* JACQUIN wurden erst von JACQUIN 1763: 47 resp. 48 mit einer Beschreibung veröffentlicht, nachdem sie als nomina nuda bzw. als nomen seminudum (*R. tomentosa* JACQUIN) nochmals von JACQUIN 1762: 14 genannt worden waren. Die beiden im obigen Text genannten Arten haben demzufolge zu heißen:

1. *Rauvolfia tetraphylla* L. 1753a: 208, n. 1, emend. JACQUIN 1760: 14; L. 1762: 303, n. 1;
   = *R. nitida* JACQUIN 1760: 14, n. 1, nomen nudum; JACQUIN 1763: 47, n. 1, cum descr., non LAMARCK 1793: 304, n. 3389, t. 172, f. 1;
   = *R. angustifolia* R. A. SALISBURY 1796: 146, n. 1;
   = *R. nitidissima* STEUDEL 1821: 682, pro syn. *R. nitidae*.
2. *Rauvolfia tomentosa* JACQUIN 1760: 14, n. 3, nomen seminudum, cum ref. ad BROWNE 1756: 180, n. 1; JACQUIN 1763: 38, n. 3;
   = *R. hirsuta* JACQUIN 1760: 14, n. 2, nomen nudum; JACQUIN 1763: 47, n. 2, cum descr.;
   = *R. canescens* L. 1762: 303, n. 2;
   = *R. subpubescens* L. 1771: 345.

Im übrigen muß die Schreibweise *Rauwolfia*, wie bis heute praktisch allgemein gebräuchlich, fallen gelassen werden, da LINNAEUS 1753a: 208, den Namen von RAUWOLF latinisierend, die Gattung unter dem Namen *Rauvolfia* beschrieben hat, und die ursprüngliche Schreibweise des ersten Autors verbindlich ist. (Int. Code 1956: Art. 73).

sprechenden Varietäten schon bei Linnaeus 1753 andere Taxa erscheinen, welche durchaus mit unserem heutigen Begriff der Subspezies übereinstimmen, geht aus der Darstellung verschiedener Arten bei Linnaeus 1753 hervor, wobei in diesem Zusammenhang auch auf die Diskrepanz zwischen theoretischer Artauffassung bei Linnaeus 1737: p. 5, part. innum. "*ratio operis*", § 5 und der tatsächlichen Anwendung des Begriffes anhand des Beispieles der Arten aus der Gattung *Scorpiurus* L. 1753b: 744-745 verwiesen sei. Im Anschluß an die vier Arten der genannten Gattung erklärt nämlich Linnaeus 1753b: 745: "Species hasce omnes olim ex una specie ortas esse dubium non est nec sufficit locus harum generationi, qui tum mutatum easdem reddere; quae itaque mixtura harum produxerit constantes plantas? Quis has omnes aut conjungat aut distinguat videtur argumentis inniti", das heißt wohl nichts anderes, als daß für Linnaeus zwar theoretisch die Art an sich ein unteilbares Ganzes und von Anbeginn der Schöpfung Gewesenes ist, daß er aber praktisch durchaus selbst von der Möglichkeit der Entstehung neuer Arten — offensichtlich auf Grund von Hybridisation — überzeugt war. So verwundert es wohl kaum, wenn sich bei Linnaeus auch Taxa nachweisen lassen, welche unserer heutigen Auffassung der Unterart entsprechen, d.h. infraspezifische Taxa, welche als genetisch konstante und geographisch gesonderte Komplexe einer Art subsummiert werden. Diese Taxa werden von Linnaeus zwar ebenfalls wie die eigentlichen Varietäten mit einem griechischen Buchstaben bezeichnet, doch erhalten sie im Gegensatz zu den eigentlichen Varietäten noch einen besonderen Namen zugeordnet. Als Beispiel sei die Darstellung von *Primula veris* L. 1753a: 142-143, n. 1 aufgeführt. Dieser Art subsummiert Linnaeus als "Unterarten" die drei Komplexe *α officinalis* L., *β elatior* L. und *γ acaulis* L., wobei Linnaeus 1762: 205, n. 1 später noch erklärend beifügt: "Varietates licet constantes *β* et *γ* non specie distinguo uti nec Maurum ab Europaeo."

Genau so wenig oder genau so viel wie sich die Unterart als Begriff in den Werken von Linnaeus zu erkennen gibt, erscheint dieser Begriff auch bei den unmittelbar auf Linnaeus folgenden Botanikern. Allerdings läßt sich, wie auch schon andeutungsweise bei Linnaeus vor allem seit der Wende des 18. zum 19. Jahrhundert das Bestreben erkennen, phylogenetisch offenbar zusammengehörende, auseinander oder von einer gemeinsamen Grundform sich herleitende, nebeneinander entstandene Sippen zusammenzufassen. Immerhin wurden diese phylogenetisch offenbar eng zusammengehörenden Sippen noch immer "nur" als Varietäten gewertet bzw. bezeichnet.

Daß jedoch schon ziemlich bald nach Linnaeus der Begriff der Unterart von dem wohl kritischsten und genauest arbeitenden Schüler des großen schwedischen Botanikers, von Friedrich Ehrhart dargestellt und definiert worden ist, scheint allgemein entgangen zu sein. Breistroffer 1946: 643, der sich kurz mit der historischen Entwicklung des Begriffes der Unterart auseinandersetzt, glaubte, daß das Verdienst, den Begriff der Subspezies in die systematisch-nomenklatorische Botanik eingeführt zu haben, Persoon zugeschrieben werden müsse. Beiden, Ehrhart wie auch Persoon kommt ein Teil in der Entwicklung des Unterartbegriffes zu. Ehrhart 1788: 88/89, n. 60 gibt eine recht ausführliche Definition dessen, was er unter dem Begriff der "Halbart", "Scheinart" oder "Subspecies" versteht, bezeichnet die Unterart aber weiterhin, wie auch schon Linnaeus, mit griechischen Buchstaben (Beispiele 1-4 bei Ehrhart 1788: 91-92), während er die Varietäten mit lateinischen kleinen Lettern bezeichnet. Persoon 1805: X seinerseits bringt nomenklatorisch einen Schritt weiter, indem er die Varietäten, wie vor ihm allgemein gebräuchlich, mit griechischen Buchstaben kennzeichnete, die Unterarten aber mit einem Stern kenntlich machte, wenn auch die von Persoon in der Praefatio gegebene Einführung der Bezeichnung der Subspezies kaum besonders glücklich genannt werden darf: "Varietates prae-

cipuae et subspecies non omissae sunt. Speciebus obscuris, aut quoad sedem dubiis, vel accuratiori indigationi subjiciendis, signa crucis seu asteriscum [vom Verf. gesperrt] apposui." Der Inhalt dieses etwas unklaren Satzes erhellt sich aus der Art und Weise der Darstellung der einzelnen Arten im Text. Hier wird deutlich, daß mit den "signa crucis", die an sich unklaren Arten oder Arten, deren systematische Stellung unsicher ist, bezeichnet werden. Das "asteriscum" hingegen bezeichnet die Unterarten, während die Varietäten, wie bereits erwähnt, in üblicher Art und Weise mit griechischen Buchstaben kenntlich gemacht werden. Besonders deutlich wird aus der Darstellung von *Solanum nigrum* L. 1753a: 186, n. 12 bei PERSOON 1805: 224, n. 54, was von diesem Autor unter dem Begriff der Subspezies verstanden wurde, indem PERSOON im Anschluß an die Aufzählung der verschiedenen, *Solanum nigrum* L. subsummierten Unterarten schreibt: "Obs. Varietates sic dictae *Sol. nigri* revera species sunt et cultura non mutantur, excepto *S. judaico*, quod *S. virginici* varietas est. WILLD. p. 1034. — ob conformitatem, quae inter eas obtinet, ut subspecies hic enumeratae sunt." Es wird aus diesen erkärenden Worten deutlich, daß PERSOON faktisch mehr oder weniger denselben Unterartenbegriff verfolgte, wie ihn bereits LINNAEUS implicit verfochten hatte, wie ja gerade auch LINNAEUS 1753a: 186, n. 12 die von PERSOON 1805: 224, n. 54 später als Unterarten von *Solanum nigrum* L. aufgeführten Taxa in der Form der bei LINNAEUS 1753 für Unterarten gebräuchlichen Darstellungsweise als *α vulgare* L., *β patulum* L., *γ villosum* L., *δ guineense* L., *ε virginicum* L. und *ζ judaicum* L. seinem *Solanum nigrum* L. subsummiert, in einer Anmerkung außerdem beifügend, daß: "Tot varietates *β. γ. δ. ε. ζ.* videntur esse hybridae proles." Das große Verdienst und gleichzeitig das Anrecht auf Priorität kommt PERSOON wohl insofern zu, als er offenbar der erste war, der sowohl nomenklatorisch als auch begrifflich Unterarten und Varietäten klar voneinander trennte. (cf. et BREISTROFFER 1946: 643).

Die Verwendung des Sternes zur Bezeichnung der Unterarten, wie sie von PERSOON gehandhabt worden ist, blieb im übrigen vor allem bei den skandinavischen Botanikern bis in die neueste Zeit in Mode (cf. e.g. C. CHRISTENSEN 1905-1906). Dabei sei an dieser Stelle immerhin auch darauf aufmerksam gemacht, daß ein Stern zur Bezeichnung einer infraspezifischen Einheit bereits bei DALIBARD 1749 auftaucht, der sich im Vorwort zu seinem "*Florae Parisiensis Prodromus*" (DALIBARD 1749: p. 20 part. innum.) darüber folgendermaßen äußert: "j'ai joint les variétés qui ne sont pas la plûpart, au sentiment de M. LINNAEUS, que des effets de la culture, aux espèces auquelles elles appartiennent, en les distinguant seulement par des astériques."

Während auch nach PERSOON bei den deutschen Botanikern der Begriff der Subspezies weiterhin verwendet wurde, so z.B. von H. G. L. REICHENBACH 1830-1833, der in der Auffassung des Unterartbegriffes eindeutig PERSOON folgte und erklärte (H. G. L. REICHENBACH 1830: VIII): "* *Asterisci* praefixi indicant species quas certe non originarias diceres, ab aliis subspecies ab aliis varietates nuncupatas, formas tamen utique distinguendas. Ita PERSOONII vestigia secutus sum, eorum desideriis curans, qui iis parem ac reliquis rationem concedunt, eorumque qui minoris eas ac reliquas aestimare proponunt." wurde der Begriff der Subspezies vor allem im französischen Sprachgebiet bis in die neueste Zeit hinein nicht aufgenommen. So verwendete z.B. GAUDIN 1828 zur Bezeichnung von Rassen den Begriff der Form, eine Verwendung, wie sie vor allem von den französischen Systematikern seit MUTEL 1834 bis in die neuere Zeit hinein (cf. e.g. ROUY & FOUCAUD 1893: XI) gehandhabt wurde. Daneben erscheint der Begriff der Unterart als "Race" oder "dauerhafte Abart" bezeichnet bei A.-W. ROTH in HOPPE 1810: 43, eine Bezeichnung, welcher sich auch A.-P. DE CANDOLLE 1813: 168 §§ 133, 134 und A.-P. DE CANDOLLE 1832:

690/728 bedient, der neben den Variations, d.h. den Varietäten im theoretischen Sinne bei LINNAEUS, Abänderungen nicht erblicher Konstanz, hervorgerufen durch oekologische Bedingungen, "variétés proprement dites" unterscheidet, die sich ihrerseits entweder zu konstanten, erblichen Abarten weiterentwickeln können und dann als "races" von den eigentlichen Varietäten und den Variations unterschieden werden, oder die, entstanden durch Bastardierung aus nahe verwandten Arten, wieder aufspalten und weiterhin als "variétés proprement dites" aufgeführt werden.

Die Tatsache, daß bei den deutschen Botanikern nach W. D. J. KOCH 1837 der Artbegriff immer weiter eingeschränkt wurde, brachte es mit sich, daß im Verlaufe des letzten Jahrhunderts der Subspeziesbegriff immer mehr in Vergessenheit geriet und erst zu Ende des vorigen Centenniums wieder von neuem — beinahe gleichzeitig von verschiedenen Botanikern — errungen wurde. Immerhin dürfte es wohl das Verdienst von Richard WETTSTEIN 1898: 32-33 sein, aufbauend auf dem geographischen Begriff der "Kleinarten" von KERNER 1881: 108 die Subspezies so gefaßt zu haben, wie sie auch heute noch meistenteils interpretiert wird, nämlich als im weiteren Sinne geographisch-morphologisch differenzierte Rasse. In den Augen von WETTSTEIN 1898: 32-33, der die Subspezies vom phylogenetischen Moment aus interpretieren möchte, sind als Unterarten diejenigen morphologischen Komplexe zu bezeichnen, die auseinander oder aus einer gemeinsamen Stammform nebeneinander entstanden sind. Dabei werden Unterarten (oder Arten), die durch größere morphologische Unterschiede, durch streng getrennte Areale und durch das Fehlen nicht hybrider Uebergänge ausgezeichnet sind, als verwandtschaftlich weiter voneinander entfernt stehend angesehen, Unterarten (oder Arten) aber mit geringeren morphologischen Unterschieden, nicht streng gesonderten Arealen und gleitenden, nicht hybriden Uebergängen als in Beziehung auf die verwandtschaftlichen Verhältnisse einander näher liegend betrachtet. Heute ist man wohl allgemein wieder zu einer der WETTSTEIN'schen Auffassung nahe kommenden oder mit dieser koinzidierenden Ansicht des Subspeziesbegriffes gelangt, nachdem besonders ASCHERSON & GRAEBNER, aber auch gewisse Bearbeiter bei ENGLER die Subspezies in einem viel weiteren Sinne verwendet hatten, um die Zahl der "Arten" zu verringern und eine scheinbar bessere Uebersichtlichkeit zu gewährleisten. Es mag hier noch angefügt werden, daß der Begriff der Unterart nie allgemeinen Eingang in die Systematik gefunden hat, vielleicht mit ein Grund, warum sich auch BUXBAUM 1951: 127-128 vom Begriff der Subspezies distanziert und an dessen Stelle die Begriffe Oekotypus für ökologisch differenzierte Rassen und Geotypus für geographisch getrennte Sippen vorschlägt. Abgesehen davon, daß der systematische und phylogenetische Wert einer solchen Unterscheidung durchaus in Frage gestellt werden kann, dürfte eine derartige Trennung weit eher eine Komplizierung als die von BUXBAUM angestrebte Vereinfachung bringen.

Zusammenfassend läßt sich wohl das Folgende festhalten: Während sachlich der Begriff der Subspezies bereits bei LINNAEUS Eingang gefunden hatte, erscheint der Begriff der Subspezies als solcher offenbar erst bei EHRHART 1788: 88/89, n. 60, wobei hier als Alternativbezeichnungen die Ausdrücke "Halbart" oder "Scheinart" neben dem Begriff der "Subspecies" vorgeschlagen erscheinen. Eindeutig typographisch unterschieden werden die Unterarten offenbar erstmalig bei PERSOON 1805: X, der als Bezeichnung der Subspezies den betreffenden Namen einen Stern voransetzt. Die Bezeichnung "Race" oder "dauerhafte Abarten" findet sich für den Begriff der Subspezies bei A.-W. ROTH in HOPPE 1810: 43, während GAUDIN 1828 für die Unterart den Ausdruck "forme" verwendete, wobei diese Bezeichnungsweise bis in die neuere Zeit bei den französischen Systematikern im Gebrauche blieb.

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THE ANNOTATION OF INTROGRESSANTS

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The recent paper by Hui-Lin Li (Taxon 6: 216-218. 1957) brought up a problem about which a number of us dealing with introgression have been wondering, namely what is the best method for designating backcrosses and members of hybrid swarms.

In a paper dealing with introgression in *Aesculus* (Rhodora 59: 185-203. 1957) I used a different formula from the one proposed by Li, but it was stated then that there may be a more satisfactory method. It seems generally agreed that there should be a formula of precise meaning which would convey the investigator's concept of a plant — or population — which is of hybrid origin. The problem arises in finding a suitable formula which indicates the nature of a specimen, and which could be used as an annotation on the herbarium sheet. This is important not only because of the biological significance of hybridization, or for a greater precision in nomenclature, but also important to the herbarium curator facing the problem of filing the specimens.

During the fall of 1956 I took the liberty to write to a number of taxonomists who I thought would have dealt in some degree with this problem. The information gained from this correspondence was that there were many different methods of annotation currently being used. It seems fitting at this time, after Li's paper, to describe briefly the methods of annotation already in use, and some thoughts bearing on the problem.

A number of investigators have used a formula such as "species A" ($\times$ "species B") to indicate that the specimen is most nearly referable to "species A" on the basis of all characters. This gives the herbarium curator an opportunity to file the specimen under that species. The name of the parent which apparently contributed the gene minority is placed in parentheses, or brackets, and preceded by the multiplication sign "$\times$." This is the method which I used for the annotation of hybrid forms in *Aesculus*, e.g., *A. sylvatica* ($\times$ *pavia*). There is objection, however, to this method, for this may possibly be interpreted as indicating that the investigator thought the specimen might represent an F_1 hybrid but that he was not too sure. Also one might possibly think that ($\times$ *pavia*) was meant for a synonym instead of an explanation. Because this formula may be ambiguous and confusing, it would be the obligation of the investigator to make known the meaning of his method of annotation.

Others have used the symbols $>$ and $<$ in their formulas, but with different meanings which way easily add to confusion. In one case the formula "species A" $<$ "species B" has been used to indicate that there has been some influence by "species B." This method would be using the symbol more or less as an arrow indicating the direction of introgression, or gene flow, rather than as a symbol indicating "less than" which is its usual mathematical usage.

It would be possible to use both the symbols $<$ (meaning less than) and $>$ (greater than) and keep the specific epithets in alphabetical order, following Art. H 1

of the Code. Thus, to use a specific example, if *Aesculus octandra* is the backcross parent, the formula might be *A. glabra* < *octandra*. This formula, however, may be more confusing particularly to the curator who may prefer to file the specimen simply under the first epithet rather than (in the example above) the dominant component. In this case, the arrangement *A. octandra* > *glabra* would be the best solution. This differs in one respect from the proposed by Li, by omitting the repetition of the abbreviation for the genus before the second epithet. It would seem that the indication of the genus here would be necessary only if this were an intergeneric hybrid.

Many authors have simply given the name of the species to which the specimen is most nearly referable (or presumably the backcross parent) and then added a short sentence such as "with characters showing influence of . . .," or possibly "atypical, with characters of . . .," or "atypical, contaminated with . . ." This method is awkward unless the annotation label is printed. Here is one of the advantages of a symbol or concise formula which would convey the same meaning as a sentence. Use of the word "contaminated" is poor due to its connotation.

When detailed quantitative analysis of the specimen is not available and hybridization or introgression is merely implied as the cause of the intermediacy, it would seem best just to state that the specimen was "atypical, probably of hybrid derivation." This noncommittal method has been used by some authors.

If a method of annotation, such as the one proposed by Li, is standardized, there should be caution against overuse by those having little or no evidence of actual hybridization or introgression. In other words, it could be an easy way of annotating seemingly intermediate specimens without real knowledge of the natural populations. Since one is not safe in implying introgression on an herbarium label without evidence, some might argue against the standardization of a method of doing so. When, however, there is ample evidence of introgression from a careful monographic study of a group using the developed techniques of analysing populations, or at least a thorough knowledge of the plants involved, a more definite statement could be made, and therefore a more precise formula or means of annotation should be used for these specimens.

WIDERSPRÜCHE UND UNSTIMMIGKEITEN IM INTERNATIONALEN CODE 1956

V. J. Grummann (Berlin)

1. Art. 49 widerspricht Art. 11 Abs. 3 und Art. 60. Nach Art. 49 und seinem Fumaria-bulbosa-Beispiel soll — ungeachtet der Priorität und der Rangstufe — in jedem Falle der Schöpfer des Namens in Klammern gesetzt werden. Die drei in dem Beispiel zur Verfügung stehenden Namen sind 1) Fumaria bulbosa γ solida L. 1753, 2) Fumaria solida (L.) Mill. 1771, 3) Corydalis solida (?) Sw. 1819. Würde der Artname Fumaria solida (L.) Mill. nicht existieren, so hieße es Corydalis solida (*L.*) Sw. Nach dem Beispiel soll aber auch bei Vorhandensein des Millerschen Artnamens (*L.* [ut var., non Mill. ut sp.]) Sw. zitiert werden. Es soll also bei der Versetzung eines korrekten Artnamens (des Millerschen), der die Priorität hat, in eine andere Gattung so verfahren werden, als ob kein korrekter Prioritätsname gleicher Rangstufe vorhanden wäre. Das Verdienst Millers, das Taxon zuerst als Art erkannt zu haben, wird in *diesem* Falle also nicht mehr anerkannt, sobald die Versetzung in eine andere Gattung erfolgt. Nun sagt aber Art. 60 uneingeschränkt: Niemals [wohlgemerkt: niemals] besitzt ein Name oder ein Epitheton Priorität außerhalb seiner

eigenen Rangstufe. Nach Art. 49 verweist "das korrekte Zitat" "Corydalis solida (*L.*) Sw." "auf den ersten Autor des legitimen Epithetons" *anderer* Rangstufe. Nach Art. 11 Abs. 3 dagegen "ist der korrekte Name die Kombination des ältesten legitimen mit der *gleichen* Rangstufe veröffentlichten Epithetons" mit dem Gattungsnamen. — Gerade umgekehrt aber als nach Art. 49 hat man nach Art. 60 zu verfahren, wenn z.B. ein älteres gültiges und legitimes Varietäts-Epitheton und ein späteres Art-Epitheton *nicht* gleichlauten. Soll Physcia tribacoides var. caesiella B. de Lesd. 1906 als Art gebracht werden, so heißt das Taxon Physcia wainioi Räs. 1921, nicht Physcia caesiella (B. de Lesd.) Suza 1929. Würde ich dieses Taxon als Art unter Brachysperma stellen wollen, so müßte ich Brachysperma wainioi (*Räs.*) sagen. Hier also müßte der Prioritätsautor der *gleichen* Rangstufe in der Klammer berücksichtigt werden. In dem zuerst geschilderten Falle dagegen soll der Name des Autors der *abweichenden* Rangstufe in die Klammer gesetzt werden, der nach Art. 60 "niemals" Priorität hat.

Was ist zu tun, um Art. 49 an die Art. 11 und 60 wieder anzugleichen und dadurch alle drei Artikel auf einen Nenner zu bringen? Das neue Fumaria-bulbosa-Beispiel ist zu streichen. Es gehört sowieso nicht in Art. 49, der sich auf die Autorengebung *bei Veränderung* der Rangstufe bezieht. Corydalis solida (L.) Sw. 1819 ändert aber gegenüber Fumaria solida (L.) Mill. 1771 garnicht die Rangstufe. — Um allen Mißverständnissen vorzubeugen, kann dann Art. 55 den Zusatz erhalten: Bei der Versetzung einer Art in eine andere Gattung ohne Änderung der Rangstufe wird nach dem Grundsatz der Priorität (vgl. Art. 60 und 11) der Name des Autors in Klammern gesetzt, der das Taxon in der gleichen Rangstufe (der Art) zuerst festlegte, unabhängig davon, ob ein älteres gleichlautendes infraspezifisches Epitheton vorliegt oder nicht. Entsprechend zu Art. 56: Bei der Versetzung eines infraspezifischen Taxons in eine andere Art oder Gattung ohne Änderung der Rangstufe wird entsprechend Art. 55 nach dem Grundsatz der Priorität (vgl. Art. 60 und 11) der Name des Autors in Klammern gesetzt, der das Taxon in der gleichen Rangstufe zuerst festlegte, unabhängig davon, ob ein älteres gleichlautendes Epitheton anderer Rangstufe vorliegt oder nicht. Art. 49 kann dann lauten: Wenn eine Gattung oder die Unterabteilung einer Gattung die Rangstufe ändert, aber ihren Namen beibehält, so muß der Autor ... [das übrige wie bisher]. Wenn eine Art oder ein infraspezifisches Taxon die Rangstufe ändert und noch kein darauf begründeter Name der neu zu wählenden Rangstufe vorliegt, so muß der Autor ... [das übrige wie bisher]. — Kurz noch einmal: Art. 60 schreibt die Prioritätsberücksichtigung der gleichen Rangstufe ohne Ausnahme vor. Art. 49 enthält eine schwerwiegende Ausnahme, durch die die ganze Prioritätsfrage ins Wanken gerät, auf der doch der Code als Grundprinzip aufbaut.

Würde übrigens das Fumaria-bulbosa-Beispiel in Art. 49 nur sagen wollen, daß man *allein und nur bei Linné* als dem Begründer der Nomenklatur und dem Autor, auf dem die ganze Nomenklatur fußt, eine Ausnahme von der Rangstufen-Priorität zu machen hat, so wäre das nur recht und billig und würde sicher von allen Autoren gutgeheißen werden. Diese Ausnahme ließe sich dann in den oben gegebenen Stellen leicht anbringen, auch in Art. 60: "Niemals besitzt ein Name oder ein Epitheton Priorität außerhalb seiner eigenen Rangstufe, *falls nicht Linné der Begründer des Taxons in irgendeiner Rangstufe ist.*"

2. Art. 24 gestattet eine irreführende Zitierung. Nach Art. 24 Abs. 4 darf man kompliziertere Namen in Form ternärer Namen wiedergeben. Die angeführte Kombination Saxifraga aizoon subforma surculosa Engl. et Irmsch. (für S. aizoon var. aizoon subvar. brevifolia *f. multicaulis* s.-f. surculosa Engl. et Irmsch.) ist aber ausführlich zu ergänzen in S. aizoon var. aizoon ... *f. aizoon* s.-f. surculosa. Für

ein Schild im Botanischen Garten oder eine Preisliste für Gartenblumen mag diese irreführende verkürzte Kombination genügen, schon nicht aber als Unterschrift unter einen Herbarbogen. Es wäre p. 117, Z. 5 v. ob. hinzuzusetzen: Man darf kompliziertere Namen in Form ternärer Kombinationen wiedergeben, *auch wenn dadurch eine irreführende Lesart entsteht.* Besser aber, man setzt hinzu: ... *wenn durch die verkürzte Form keine falsche (irreführende) Lesart der ausführlichen Kombination abzuleiten ist.* Das Beispiel wäre in letzterem Falle durch ein anderes zu ersetzen. Man kann hier einwenden: Da das gleiche Epitheton innerhalb einer Art in der gleichen Rangstufe nur einmal vorkommen darf, ist ein abgekürztes Zitat nie irreführend. Dann bleibt aber doch die Tatsache bestehen, daß die ausführliche Kombination aus der abgekürzten nicht genau herausgelesen werden kann.

3. Zu p. 106, Art. 7 Anm. 3, Satz 1: Läßt man in diesem Satz den Teil "oder wenn der Holotypus verlorengegangen oder vernichtet ist" weg, so gibt der Satz keinen rechten Sinn mehr. Es müßte heißen: Wenn vom Autor bei der Beschreibung eines Taxons kein Holotypus angegeben worden ist, so hat ein anderer Autor das Recht, für dieses Taxon einen Typus auszuwählen (zu bezeichnen). Wenn der Holotypus [dagegen] verlorengegangen oder vernichtet ist, so kann für diesen ein Ersatz gewählt werden, falls ...

4. Faun. statt Fauna zu schreiben, gibt der Code in der Anleitung zum Zitieren p. 301, Z. 2 v. ob. etc. als vorbildlich an. Faun. ist eine Scheinabkürzung, erspart nicht eine einzige Druckertype und erschwert ohne jeden Vorteil das Lesen. Warum also nicht Fauna?

5. p. 212, Z. 16 v. unt.: Statt Nebenstudien Geschäft. Gebiet. lies Nebenstu*nden* *B*eschaefft. Gebiet*e* Pflanzenk. (Vgl. dazu Hillmann, J. und Grummann, V. Flechten 162 Anm. 1. 1957.)

6. In den folgenden Punkten seien einige Beispiele dafür genannt, wie sich der Code in bezug auf "mehr Gleichförmigkeit und Klarheit" (Praeambel) etwa noch abrunden könnte.

7. Auf den Seiten 211-213, 227 und 279 ist derselbe Autor G. H. Weber auf *neunerlei* Art und Weise zitiert (siebenmal ausdrücklich auf ein und dasselbe seiner Werke bezogen): als G. H. Web. — Weber — Web. — Weber in Wiggers — Web. in Wiggers — G. H. Web. in Wiggers — Weber ("Wiggers") — Wiggers — Wigg. — Es wird wahllos O.K. — O.Ktze. — O. Kuntze zitiert (p. 212, 223, 228 etc.). — Immer wird Stackh. zitiert. Nur p. 212 steht ausdrücklich abweichend J. Stackhouse. — p. 128, Z. 15 v. ob. wird in der Empfehlung ausdrücklich "Fr. für Elias Magnus Fries" zu zitieren angegeben, wie es zum Unterschied von Th. Fr. auch allgemein üblich ist. Warum steht nun p. 207 r., Z. 12 v. ob. E. M. Fries und nicht auch Fr.? — p. 200/201 steht achtmal Kütz., p. 206 aber zweimal Kuetz. — p. 212 l., Z. 20 und 22 v. ob. heißt es Koerb., sechs Zeilen weiter aber, auf dasselbe Werk bezogen, zweimal Körb. — Immer steht (z.B. p. 207 r., Z. 1-6 v. unt.) *C.* Ag. neben J. Ag. (p. 207 r., Z. 6 und 7 v. unt.) und neben J. G. Agardh (p. 269 r., Z. 2 v. unt.). Aber p. 212 l., Z. 26 und 27 v. ob. ist ausdrücklich ein *C. A.* Agardh zitiert, auf dasselbe Werk bezogen wie p. 206 l., Z. 4 v. ob., wo allerdings "*A*lg. *S*cand." statt "*a*lg. *s*cand." zitiert wird und das Werk offenbar auch Seitenzahlen hat ("XViii"). — Nach Empfehlung 50 A Abs. 4 wird für filius die Abkürzung f. angegeben. p. 254 l., Z. 18 und 20 v. oben steht dann tatsächlich L. f., aber p. 213 r., Z. 9 v. unt. L. fil. — Gibt man einerseits solch feine Unterschiede wie Fr. und Th. Fr., p. 304 zwischen Mueller ..., Müller, Franz August und Müller, Franz, so muß man — in ein und demselben Werk zitiert! — annehmen, daß auch C. Ag. und C. A. Ag., Kütz. und Kuetz. usw. usw. verschiedene Autoren sind.

8. In der Anleitung zum Zitieren wird vorgeschlagen, ohne Klammern zu zitieren, z.B. Anacampseros Sims. Bot. Mag. 33: pl. 1367. 1811. In den Beispielen zu den Regeln und Empfehlungen aber bringt der Code die Zitate hinter den Namen der Taxa in Klammern stehend, z.B. Carphalea Juss. (Gen. Pl. 198. 1789). — Nach der Anleitung (p. 304 Punkt 1.2.) sind die Autoren hinter den Namen abgekürzt zu bringen. Neben Lam. et DC. (p. 212 l., Z. 3 v. unt.) heißt es aber auch (p. 211 r., Z. 3 v. unt.) Lamarck et De Candolle. — p. 212 r., Z. 1 v. ob. wird Lich. sicula, 27. (mit Komma) zitiert. p. 244 l., Z. 10 v. unt. dagegen heißt es Fl. von Schlesien 278. (ohne Komma). — p. 212 l., Z. 9 v. unt. steht entsprechend der Anleitung Ach. Meth., eine Zeile vorher aber Ach., Meth. (mit Komma). — p. 29, Z. 6 und 16 v. unt. wird verschieden zitiert: l.c. 81. 1821 und pp. 23-24. Warum nicht auf derselben Seite einheitlich: (l. c. 81) und (l. c. 23-24)? — Warum wird dasselbe Werk einmal Meth. und einmal Method. abgekürzt? (p. 212 und 213.) — Wenn der Code nicht die Verantwortung übernehmen will, die Zitierung der Nomina conservanda auch in dieser Hinsicht auf einen Nenner zu bringen, müßte er auch darauf einleitend hinweisen oder jedes Zitat in Anführungszeichen setzen.

9. Warum *empfiehlt* man *zwei verschiedene* Zitierungen der Jahreszahl (p. 306 Punkt 9)? Das kann doch nicht so gemeint sein, daß *in derselben Arbeit* zwei verschiedene Zitierungsweisen, (1780) und 1780, angewendet werden sollen? Tatsächlich tut dies der Code sogar in ein und demselben Muster-Anleitungsbeispiel (p. 306, Z. 13 v. ob.)! Wer würde wohl analog schreiben: Sporen 20 μ lang, 0,004 mm breit, Querwand 9/10 000 mm dick, an den Seiten bis 1,2 mü zunehmend? Auch p. 212 steht 1777 neben (1778). Warum überhaupt *zwei* Schreibweisen *empfehlen*? Wenn es p. 306, Z. 1 v. ob. hieße: "... sollte ohne Klammern am Ende ...", so fiele eine "Ausnahme" von der Vorschrift, alles durch Punkte zu trennen, weg. Bei der Zitierung "1: 1-818 (1831)" sind die beiden Bestandteile Seitenzahl und Jahreszahl nicht durch einen Punkt getrennt.

10. Zu p. 210 r.: Zitiert man [Pers.] ex Gray, [Nees] ex Gray, oder vielmehr [Pers. ex] Gray, [Nees ex] Gray? Unter Fortlassung der Klammer heißt es im ersten Falle Pleuropus ex Gray, im zweiten Pleuropus Gray.

11. Nach p. 304 Punkt 1 Abs. 3 gibt man sich die Mühe, durch ein Komma zu kennzeichnen, daß es bei der Zitierung Adans. Adanson und nicht Adans heißt. Anderseits gibt man Silbenrätsel auf, indem man A. K., J. R., H. B. K. abkürzt. Wie lange soll einer in einer mehrbändigen Bibliographie, wie in Lindau et Sydow, Thesaurus, den ihm noch unbekannten A. K.-Autor unter den K-Autoren suchen? Er muß alle K-Autoren durchgehen, deren Vorname mit A anfängt!

12. Warum zitiert man römische Seitenzahlen Xiii statt *XIII*, wo doch die Werke selbst *XIII* schreiben?

13. Uneinheitliche Zitierungen im selben Werk sind irreführend und geben einer Arbeit ein "scheckiges" Gesicht. Da sie sich auch in kleinen Arbeiten oft finden, sollte es für nötig erachtet werden, im Appendix V p. 306 nach Z. 28 v. ob. den Zusatz zu bringen: 10. Um Irrtümer zu vermeiden und einer Publikation ein einheitliches Gesicht zu geben, sollte in ein und derselben Veröffentlichung eine genau gleichlautende Zitierungsweise der Autoren-Abbreviatur, desselben Werkes, der Jahres-, der Seiten-, der Bandzahl und der Edition erfolgen [oder: angestrebt werden]. — Die Publikation einer Anleitung zum Zitieren gerade im Code hält Verf. im übrigen für geeigneter und notwendiger, als dies p. 9 des Code betont ist.

NEWS AND NOTES

R. T. PALHINHA (1871—1957)

On 13th Nov. 1957, Prof. Ruy Telles Palhinha, emeritus Professor of Botany in the Faculty of Science of Lisbon, died as a result of injuries suffered in a motor accident.

He was born at Angra do Heroísmo (Azores) on 4th Jan. 1871.

From 1896 till 1941 he devoted himself to teaching, in High Schools, in the Faculty of Science of Lisbon, and in the School of Pharmacy which he directed for some years. Thus numerous were the students who came under Prof. Palhinha's influence.

From 1921 till 1941, when he retired, he was Director of the Botanical Institute and Botanical Garden of the University of Lisbon.

He was a fellow of the Academia das Ciências de Lisboa and a member of the Sociedade Portuguesa de Ciências Naturais, Associação Portuguesa para o Progresso das Ciências, Instituto de Coimbra, Sociedade Broteriana, Grupo Português da História das Ciências, Sociedade de Geografia, Société Linnéenne de Lyon, Real Academia de Córdoba, etc.

Professor Palhinha prepared the 2nd edition of the "Flora de Portugal" during the lifetime of its author, Prof. D. António Xavier Pereira Coutinho, and the 2nd editions of the works of Conde de Ficalho.

He published many works on floristics, phytogeography, physiology, the history of Botany, etc.

A special mention must be made of his works on the Flora of the Azores. At the time of his death he was engaged on a revision of a "Catálogo dos Espermatófitos dos Açores".

In 1948 he directed the work of the I Reunião de Botânica Peninsular in the Serra do Gerês (North Portugal) and in summer of 1955 he took part in the II Reunião held at Aragon (Spain).

A. LUISIER (1872—1957)

On 4th November, 1957, the death occurred at Instituto Nun'Alvres (Caldas da Saude, Portugal) of this distinguished bryologist, author of many valuable works on the Moss Flora of the Iberian Peninsula and the Madeira Islands.

He was born in 1872 at Fregnoley (Bagnes, Valois) and in 1891 he went to Portugal, where he spent the greater part of his life.

Dr. A. Luisier was the director of the scientific periodical Brotéria, Série Ciências Naturais.

He was a member of the Academia das Ciências de Lisboa, Associação Portuguesa para o Progresso das Ciências, Liga Portuguesa para a Protecção da Natureza, Sociedade Broteriana, Sociedade Portuguesa de Ciências Naturais, Société Valoisanne de Sciences Naturelles, and Sullivant's Moss Society.

In 1942, in recognition of his outstanding work, he was made "Doctor honoris-causa" by the University of Porto.

AMERICAN SOCIETY FOR PLANT TAXONOMISTS

The attention of members of the IAPT is called to developments in the American Society of Plant Taxonomists. At the beginning of 1957 this Society acquired the periodical BRITTONIA as its official publication; it will be published as a quarterly and will contain original articles in the field of plant taxonomy, a section devoted to news and notes of interest to members, and a supplement carrying the TAXONOMIC INDEX. Volume 9 of BRITTONIA (1957) carries many papers of interest to all plant taxonomists; three numbers have appeared and the fourth is in press. It is fully expected that the periodical will maintain its firm quarterly schedule. Its pages are open for contributions from all members.

The ASPT is a Member Society of the American Institute of Biological Sciences, and its members (if they reside in the U.S.A. or its outlying territories or in Canada) receive all the benefits of membership in the Institute, including a subscription to the AIBS BULLETIN. Dues in the ASPT are $ 6.50 per year ($ 5.50 for members residing outside the U.S.A. and Canada); this includes a subscription to BRITTONIA (with the TAXONOMIC INDEX).

All individuals interested in plant taxonomy and allied fields, whether resident in the U.S.A. or elsewhere, are cordially invited to apply for membership in the American Society of Plant Taxonomists. Current officers (for 1957) are: T. G. Yuncker, President; A. C. Smith, Chairman of the Council; Robert F. Thorne, Secretary; Charles B. Heiser, Jr., Treasurer. H. W. Rickett is Editor-in-Chief

of BRITTONIA. The government of the Society is vested in a Council of seven elected by the membership.

For further information apply to Robert F. Thorne, Secretary, Department of Botany, State University of Iowa, Iowa City, Iowa, U.S.A. Applications for membership should be accompanied by payment of dues for one year.

STARTING POINTS FOR CYANOPHYCEAE

For the names of the species belonging to the Hormogonales two different starting points later than Linnaeus, Species Plantarum ed. 1, 1753, have been accepted since 1910. They are Gomont, Monographie des Oscillariées (I, II) — Ann. Sci. Nat. Bot. ser. 7. 15: 263-268. (1892); 16: 91-264. (1892) for the Nostocaceae homocysteae, and Bornet et Flahault, Revision des Nostocacées hétérocystées (I-IV) — Ann. Sci. Nat. Bot. ser. 7. 3: 323-381. (1886); 4: 343-373. (1886); 5: 51-129. (1887); 7: 177-282. (1888) for the Nostocaceae heterocysteae.

We should not make the mistake of considering that the species without heterocysts belong to the Nostocaceae homocysteae and those with heterocysts to the Nostocaceae heterocysteae. If we did so, *Amphithrix* Kütz. ex Bornet et Flahault, Rev. Nost. hét. 1: 343. (1886); with two species, the three species of the sectio *Homoeothrix* of *Calothrix* Ag. ex Born. et Flah., Rev. Nost. hét. 1: 345. (1886) and *Dichothrix nordstedtii* Born. et Flah., Rev. Nost. hét. 1: 375. (1886) all without heterocysts, would be invalidly published.

Fortunately, Bornet et Flahault, Rev. Nost. hét. 1: 325. (1886), gave the following description of the Nostocaceae homocysteae and the Nostocaceae heterocysteae:

"Les Nostocacées hormogonées comprennent deux groupes faciles à distinguer lorsqu'on examine des plantes complètement développées. Dans le premier, toutes les cellules sont de même valeur et susceptibles de se diviser indéfiniment; dans le second, certaines cellules se différencient en poil ou en hétérocyste et deviennent incapables de développement ultérieur. Nous appellerons Nostocacées homocystées, c'est-à-dire Nostocacées à cellules uniformes, les Algues du premier groupe, et celles du second Nostocacées hétérocystées ou Nostocacées à cellules dissemblables."

Thus, the genera *Loefgrenia* Gomont (1896), *Mastigocoleopsis* Geitler (1925) and *Iyengariella* Desikachary (1953) without heterocysts but with trichomes terminating in a hair, can reasonably be regarded as belonging to the Nostocaceae heterocysteae. In *Stauromatonema* Frémy (1930) emend. Geitler (1935), however, two species have heterocysts, but there is one species, *St. minutissinum* Geitler, without heterocysts and its trichomes do not terminate in a hair. Whereas two species of *Stauromatonema* are Nostocaceae heterocysteae, one belongs to the Nostocaceae homocysteae. This conclusion, though undeniable, sounds absurd.

J. Th. Koster (Leiden)

H. KARSTEN: FLORA COLUMBIAE

Von diesem Werk erschienen laut Titelblatt vol. 1, Text u. tab. 1-100: 1858-61, und vol. 2, Text u. tab. 101-200: 1862-69, der erste bei F. Dümmlers Nachf., der zweite bei Harrwitz & Gossmann in Berlin. Jeder Band sollte nach dem Vorwort in Band 1 (vom 21.2.1859) in je 5 Lieferungen zu 20 Tafeln erscheinen. Kew Index und Index Londinensis geben nur die auf den Titelblättern der beiden Bände vermerkten Jahreszahlen an. Es ist mir in keiner der großen europäischen Fachbibliotheken ein in Lieferungen gebundenes Exemplar begegnet.

Ich habe nun versucht, die Erscheinungsdaten der einzelnen Lieferungen an Hand des "Börsenblattes für den Deutschen Buchhandel" zu ermitteln. Mit Hilfe der Auskunftsabt. der Deutschen Staatsbibliothek in Berlin, der Bayr. Staatsbibliothek in München, der Univ.-Bibliothek in Greifswald und der Bibliothek des Börsenvereins des Deutschen Buchhandels in Frankfurt a. Main war es möglich, diese Daten schließlich vollständig zu erhalten:

H. KARSTEN, Flora Columbiae
(Specimina Selecta)

Bd.	Lief.	pag.	tab.	(im Börsenbl.n. vom)	
1	1	1-42	1-20	41	6.4.1859
	2	43-82	21-40	19	13.2.1860
	3	83-122	41-60	150	5.12.1860
	4	123-162	61-80	41	8.4.1861
	5	163-200	81-100	147	29.11.1861
2	1	1-40	101-120	154	15.12.1862
	2	41-80	121-140	153	14.12.1863
	3	81-114	141-160	132	27.10.1865
	4	115-154	161-180	143	28.11.1866
	5	155-188	181-200	195	24.8.1869

Das Börsenblatt für den Deutschen Buchhandel (1834-1945) ist eine bisher wenig beachtete Quelle für die Ermittlung der Erscheinungsdaten von in Deutschland seit 1834 erschienenen botan.-syst. Büchern. Es erschien zunächst dreimal pro Woche, später täglich, und gestattet so in vielen Fällen ein genaueres Festlegen der Erscheinungsdaten, als dies das Datum auf dem Titel zuläßt. Leider ist infolge der kriegsbedingten Schäden in Deutschland an keiner Stelle mehr ein vollständiges Exemplar des Börsenblattes vorhanden. Ein verhältnismäßig vollständiges Exemplar besitzt die Bibliothek des Börsenvereins des Deutschen Buchhandels in Frankfurt a. Main, Großer Hirschgraben 17/19, die entsprechende Auskünfte erteilt.

H. Sleumer, Leiden.

A NEW SYSTEM OF COLOUR TERMINOLOGY

The need of having simple colour standards for use both in the field and herbarium /or laboratory/ has been felt since the exhaustion of the last edition of Saccardo's *Chromotaxia*. The two colour charts published afterwards mainly for horticulturists /*Horticultural Colour Chart*; Wanscher's *Flower Colour Chart*/ could not replace even the somewhat primitive publication by Saccardo. Nearly the same applies to various colour dictionaries which — although being of more or less permanent value as works of reference, do not solve, in general, the problem of denoting the identified colours in terms suitable for the purpose of a technical diagnosis in taxonomy. Accordingly, Dade /Ref. 1/ proposed that such terms, "covering the whole range of Ridgway's classification, and maintaining as far as possible the classical names of Saccardo's *Chromotaxia* should be selected and defined".

Many years of the author's studies in what may be called *coloriscopy* and *colorimetry* respectively gave rise to a new system of colour terminology the material basis of which being represented by a *decimal* colour-order system like that of Munsell. The individual hues of this system are termed whenever possible in accordance with the proposal of Dade: *ruber, aurantiacus, flavus, chlorinus, viridis, venetus, cyaneus, lazulinus, violaceus,* and *purpureus*. Equivalents in six modern languages are added in a separate vocabulary.

The new system forms part of a book entitled *Farbenbestimmung in der Biologie* which appears in the spring of 1958 /Ref. 2/. Owing to the fact that the edition will be very limited, the individuals and institutes interested in that book are advised to address their orders as soon as possible directly to the publisher: VEB Gustav Fischer Verlag, Villengang 2, Jena, Germany.

References

Dade, H. A. 1943 /1949/: Colour terminology in biology. Kew, Surrey /The Commonwealth Mycological Institute/. Price 3 s. 9 d.

Paclt, J. 1958: Farbenbestimmung in der Biologie. Jena /VEB Gustav Fischer Verlag/. *With a double colour chart, 3 colour plates, 1 monochromatic plate, 22 figures and 3 masks.* Bound in cloth, in 8°. Price about 15 DM.

J. Paclt, (Bratislava).

NEW YORK BOTANICAL GARDEN

Dr. William C. Steere, Dean of the Graduate Division of Stanford University, has been appointed Director of The New York Botanical Garden. Mr. Charles B. Harding, President of the Garden, made this announcement at the meeting of the Board of Managers on December 12, 1957. It is expected that Dr. Steere will begin his duties as Director about July 1958. In the interim Dr. David D. Keck, Assistant Director and Head Curator, will serve as Acting Director, as Dr. William J. Robbins, the present Director, is retiring on December 31, 1957, at his request.

Dr. Steere, a B.S. graduate of the University of Michigan in 1929, earned his Master's degree in 1931 and his Ph. D. degree in 1932. He instructed in botany for two years at Temple University, then returned to Michigan as a member of the faculty in 1931 and served successively as assistant professor, associate professor, professor and chairman of the department of botany until he joined the department of biological sciences at Stanford University in 1950.

He is a member of a number of scientific organizations and was president of the Bryological section of the International Botanical Congress, Paris, 1954, and program director of the National Science Foundation, Washington, D.C., 1954-1955. He recently resigned as editor-in-chief of the "American Journal of Botany"; he had served in that capacity for the past four years. He was editor-in-chief of the "Bryologist", 1938-1954.

Dr. Steere has made extensive studies in the cytology and systematics of Bryophytes and their geographic distribution and has engaged in field work in Puerto Rico, Colombia, Ecuador and Alaska.

Dr. Clark T. Rogerson, who was Assistant Professor of Botany of Kansas State College and assistant mycologist at the Agricultural Experiment Station of that state for the past seven years, assumed his duties as Curator of the Cryptogamic Herbarium of The New York Botanical Garden on February 1, 1958. Following his graduation from Utah State Agricultural College as B.S. in 1940, he served as assistant plant pathologist for that state; then was appointed mycologist at Cornell University in 1946 from which University he received his Ph. D. in 1950.

A member of the American Association for the Advancement of Science, Mycological Society of America, the American Phytopathological Society, the Botanical Society of America, Torrey Club, British Mycological Society, and Kansas Academy of which he has been secretary since 1953, Dr. Rogerson's special studies have been on the parasitic fungi of Kansas and the taxonomy of ascomycetes and of the hypocreales.

Dr. Rogerson was born in Ogden, Utah, in 1918.

BIOHISTORICAL INSTITUTE UTRECHT

Frans Verdoorn, Managing Editor of the Chronica Botanica Co. and Secretary of the International Biohistorical Commission, of Waltham, Mass., U.S.A., has been appointed Director of the new Biohistorical Institute of the University of Utrecht, the Netherlands. This institute, now being set up in conjunction with Professor Lanjouw's Botanical Museum and Herbarium, will concern itself with the cultural, historical, other humanistic and related aspects of the pure and applied life sciences, with some special reference to the plant sciences. It will be located in a building at 187 Nieuwe Gracht, bordering on the Utrecht Hortus Botanicus, formerly the residence of Profs. Miquel, Went Sr., and Koningsberger.

The publication programme of the CHRONICA BOTANICA Co. (with the exception of certain biohistorical publications to be issued in the Netherlands) has been taken over by the Ronald Press Co. of New York City, on October 1, 1957, both as to most current and forthcoming titles. Dr. Verdoorn will act as Consulting Editor, while Mr. John A. Behnke, Science Editor and Vice President of the Ronald Press Co., will develop a "Chronica Botanica" division which will publish forthcoming volumes of Chronica Botanica and related serials.

INTERNATIONAL CODE OF BOTANICAL NOMENCLATURE

Correction

The names *Androcryphia* and *Herberta,* included in the lists of nomina conservanda (I.C.B.N. p. 216, 217) have no standing as such (see Taxon 3: 233. 1954), and are to be deleted.

F. A. Stafleu

UNIVERSITY OF EDINBURGH

A short course in the Practice of Herbarium Taxonomy will be given in the University Department of Botany, Royal Botanic Garden, Edinburgh 4, from September 1st. — 13th., 1958. The course is designed not only to provide training for taxonomic research, but also to assist those who will not be professional taxonomists to name their plants correctly. A short course of lectures will be given, and the practical work will entail the revision of small groups of species carried out under close personal supervision. Further particulars can be obtained from Dr. Davis at the above address.

CORRECTION

In Taxon 6(7). 1957 on p. 206 read: **Oreobambos** for Oreobambus.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Mr. K. U. Kramer, Lange Nieuwstraat 106, Utrecht, Netherlands.

Pflanzenreich

A new photographically reproduced edition of Vol. VI, 23: A. Engler & K. Krause, *Araceae* (1905-1920), publ. by H. R. Engelmann (J. Cramer), Weinheim/Bergstrasse, Germany; in two vols.

Flora of North Africa

†R. Maire: Flore de l'Afrique du Nord IV. *Cyperaceae, Palmae, Araceae, Lemnaceae, Juncaceae, Bromeliaceae, Commelinaceae, Pontederiaceae.* Ed. P. Lechevalier, Paris, 1957. (333 pp., fig. 575-744; with keys and descriptions; includes cultivated species).

Flora of Java

An English edition of C. A. Backer's Beknopte Flora van Java (Nooduitgave), issued by the Rijksherbarium, Leiden, Netherlands, which is now almost complete, will appear in the near future.

Cultivated Bamboos

F. A. McClure: Bamboos of the genus *Phyllostachys* under cultivation in the United States. Publ. as Agriculture Handbook No. 114 by the U.S. Dept. of Agriculture, Washington, D.C., 1957. (69 pp., 53 ill., with a key based on vegetative characters and descriptions).

Index to mycological and lichenological literature

G. Lindau & P. Sydow: Thesaurus literaturae mycologicae et lichenologicae; R. Ciferri: Supplementum 1911-1930, A-D. Papia, Cortina, Italy, 1957. (689 pp., publications arranged alphabetically according to authors' names).

Flora of the Canadian Arctic Archipelago

A. E. Porsild: Illustrated flora of the Canadian Arctic Archipelago. Publ. as Nat. Mus. Canada Bull. 146, Ottawa, 1957; $ 2.00 (209 pp., 71 ill., 332 maps; with keys and descriptions, line drawings of all species by D. T. Lid; maps giving North American ranges).

Shrubs of Ontario

J. H. Soper, M. L. Heimburger & L. A. Garay: Shrubs of Ontario, Part I. Publ. by Conservation Branch, Ont. Dept. of Planning and Development, Toronto, 1957. (55 pp., dealing with an equal number of species; maps and illustrations for all species).

North American Flora

H. K. Svenson: Vol. 18 pt. 9, *Cyperaceae*: *Scirpeae* (Continuation). Publ. by the N.Y. Bot. Gard., 1957. (pp. 505-556, 1 plate; deals with the *Scirpeae* exclusive of *Scirpus*).

Mosses of Indiana

W. H. Welch: Mosses of Indiana. Indianapolis, 1957. (478 pp., 254 figs., with keys to and descriptions of all species occurring in the state, illustrations for every species, and an illustrated glossary).

Flora of Nevada

Contributions toward a flora of Nevada. 43. E. T. Wherry: *Polemoniaceae* of Nevada (*Ipomopsis* and *Gilia* sect. *Arachnion* contributed by V. & A. Grant). (103 pp., 1 fig.) 44. M. E. Mathias & L. Constance: *Umbelliferae* of Nevada. (60 pp., 1 fig.). Both Beltsville, Md., 1957.

Uredinales of the U.S.S.R.

Flora sporovych rastenij SSSR (Flora plantarum cryptogamarum URSS) IV. *Fungi* (1). V. Th. Kuprevič & V. H. Tranšel': *Uredinales* 1. *Melampsoraceae*. Publ. by Akademija Nauk SSSR, Moskou/Leningrad, 1957. (420 pp., 160 figs., with keys, descriptions, data on host-plants, extensive bibliography, and historical introduction; in Russian).

Ustilaginales of Romania

T. Săvulescu: Ustilaginalele din Republica Populară Romînă (*Ustilaginales* Reipublicae Popularis Romaniae). Publ. by the Academy of the Romanian Republic, Bucarest, 1957. (1168 pp. in 2 vols.; general part with data on morphology, life cycle, host-plants, distribution, and agricultural importance; special part with keys and descriptions; 594 photographs and drawings, 21 coloured plates. In Romanian).

Algae of Portuguese Rice Fields

J. de Carvalho e Vasconcellos: Algas macroscópicas dos arrozais Portugueses (Macroscopic algae from the Portuguese rice fields). Lisboa, 1956. (73 pp., 6 photographs, numerous drawings, with descriptions of genera and species).

Diatoms of the Netherlands

A. van der Werff & H. Huls: Diatomeeënflora van Nederland. Aflev. 1. Abcoude, Netherlands, 1957. (Introduction with remarks on morphology and ecology, and glossary; illustrations and concise descriptions of 50 species, in Dutch; loose-leaf. Orders should be sent to A. van der Werff, Stationsstraat 60, Abcoude, Netherlands).

Welsh Flowering Plants

H. A. Hyde & A. E. Wade: Welsh flowering plants. A handbook to the collection in the Welsh National Herbarium. 2nd ed., rev. by A. E. Wade. Publ. by Nat. Mus. Wales, Cardiff, 1957. (209 pp., an enumeration, with phytogeographical notes).

Flora of East Germany

W. Rothmaler: Exkursionsflora. 6th ed. Berlin, 1957. (A flora for field use in East Germany, with keys, concise descriptions, and numerous drawings; deals with all vascular plants; xxviii + 366 pp.).

* * *

New Periodicals

Principes, Journal of the Palm Society. Editor: Dent Smith, 2514 S. Peninsula Drice, Daytona Beach, Florida. The first issue, Vol. I no. 1, appeared in October, 1956. Annual subscription $ 6.00.

Acta Cientifica Potosina, publication of the University of San Luis Potosí, México. Vol. I (1) appeared in 1957.

* * *

Monographs, revisions, etc., published in periodicals.

R. S. Adamson: The South African species of *Aizoaceae.* IV. *Mollugo, Pharnaceum,* and *Hypertelis.* Jo. So. Afr. Botany 24(1): 11-65 (1958). (With keys to genera and species, descriptions, and index of exsiccatae).

D. Aichele & H.-W. Schwegler: Die Taxonomie der Gattung *Pulsatilla.* Fedde Rep. 60(1-3): 1-230 (1957). (With extensive data on morphology, anatomy, infraspecific units, geography, ecology, and nomenclature; unfortunately without any keys).

J. H. Beaman: The systematics and evolution of *Townsendia* (*Compositae*). Contr. Gray Herb. 183: 1-151 (1957). (With key, descriptions, maps, and photographs).

R. A. Blakelock: Notes on the flora of Iraq with keys — Part III. *Caryophyllaceae*; additions and corrections. Kew Bull. 1957 (2): 177-224.

M. Buchinger & R. Falcone: Las Meliáceas Argentinas. Rev. Invest. Forest. 1(1/2): 9-58 (1957). (With keys, descriptions, and photographs).

Sh. Carlquist: The genus *Fitchia* (*Compositae*). Univ. Calif. Publ. Bot. 29(1): 1-72 (1957). (With extensive data on anatomy and morphology, key, descriptions, figures, and 35 plates).

R. M. Crovetto: Clave para el reconocimiento de las leguminosas campestres de la Mesopotamia Argentina por caracteres vegetativos. Rev. Invest. Agric. 11(3): 195-208 (1957).

J. Cuatrecasas: The Colombian species of *Tetrorchidium.* Brittonia 9(2): 76-82 (1957). (With key).

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A. Ducke: The genus *Manilkara* Adans. in Brazil. Jo. Linn. Soc. London 55 (Botany No. 362): 644-656 (1957). (With key).

J. D. Dwyer: The tropical American genus *Sclerolobium* Vogel (*Caesalpiniaceae*). Lloydia 20(2): 67-118 (1957). (With keys and descriptions).

N. W. Easterly: A morphological study of *Ptilimnium.* Brittonia 9(3): 136-145 (1957). (With key).

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M. P. M. Herrmann-Erlee & H. J. Lam: Revision of the *Sapotaceae* of the Malaysian area in a wider sense. VIII. *Krausella* H. J. Lam. Blumea 8(2): 446-451 (1957). (With key and descriptions).

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Membership Fees

Members are requested to pay their membership fees to the regional treasurers.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.
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TAXON

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WHAT IS A "NEW TAXON"?

R. Ross (London)

In the recent note in which he proposed an amendment of Art. 34, Bullock (Taxon 6: 215-6) states "the effect of the wording of the article [Art. 34] is to invalidate all new names published since 1 Jan. 1935 which depend upon a reference back to any previously published description, unless the latter was in Latin." Art. 34, however, applies only to "a name of a new taxon", and hence Bullock's statement is only true if all new names are names of new taxa. The purpose of this note is to examine how far this is so, and to consider the question of whether the phrase "a name of a new taxon" needs definition.

On the question of what a new taxon is, Bullock says "since a taxon is defined as any taxonomic group admitted or implied by the Code, such as 'genus', 'species', etc., a new taxon could be something different from these". This statement implies that a taxon is a category, denoted by a term such as those in the list "Divisio .... Subforma" in Art. 4. However, as Rickett (Taxon 7: 37. 1958) has pointed out, a taxon, as that word is used throughout the Code, is a group of plants brought together to form a unit of a taxonomic classification and denoted by a name such as *Ranunculaceae*, *Ranunculus*, or *Ranunculus acris*.

The terms "new genus", "new species", etc., more often in the form "gen. nov.", "sp. nov.", are so commonplace in the literature of taxonomic botany that there is no need to argue the point that "new taxon" in the Code means "newly recognised taxon" and not "newly evolved taxon". This being accepted, we are now in a position to consider which new names are names of new taxa.

Where the new name is accompanied only by a description and not by any reference to a previously published name or description, there is no difficulty. It is clearly the name of a new taxon. It is only in those cases where there is a reference to a previously published description that there can be doubt. The various categories into which such cases fall need to be considered separately. They are:

(i) New names proposed to replace validly published but illegitimate names, there being no change of position or rank of the taxon concerned. There is clearly no new taxon involved in such cases. It should be noted that the type of the new name is the type of the previously and validly published name for which it is substituted.

(ii) New names proposed on change of position without change of rank. It is irrelevant whether the new name is what is termed a new combination, the epithet of the previous name being retained, or a new name in which the previous epithet is not retained because its use would be illegitimate. In either case a previously recognised taxon, not a new one, is being given a new name, and here too the type of the new name is the type of the previously and validly published name. This is

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so even when there is no legitimate name for the taxon the position of which is changed, but only a validly published illegitimate one the description attached to which is cited, and it holds whether or not the epithet of the illegitimate name is adopted.

(iii) New names proposed on change of rank. Here there is more difficulty. It can be argued that when, say, a subspecies is raised to specific rank there is an addition to the total of recognised species, and hence the new specific name is the name of a new species. However, Art. 49, 51, 60, 61, make it clear that the rank of a taxon can be changed and thus that, although this may be a case of a new species, it is not a case of a new taxon. When a botanist decides that a group of plants which have previously been regarded as a subspecies, say, in fact constitute a species separate from that to which they have been assigned as a subspecies, he may, if he wishes, provide a latin diagnosis to validate the name he adopts and designate one of the specimens from which that diagnosis is drawn up as type. Even if he goes on to state that the former subspecies belongs to this species, there is not necessarily an identity between the two, and his species is a new taxon. If, on the other hand, he validates his new specific name by reference to the diagnosis of the subspecies, whether or not he adopts the subspecific epithet, there is an identity between the two, the species is not a new taxon but an old taxon with its rank changed, and the type of the new specific name is the type of the previously and validly published subspecific name.

It is a significant contrast to this that when a new genus is proposed for a single species previously assigned to some other genus, this is never regarded as a change of rank of the taxon from species to genus. This is equally true if it is only a new monotypic subseries based on a previously published species. This is because the species is not replaced in the system by the genus, or the subseries, but both are treated as separate nomenclatural entities of different rank but identical circumscription; it is a consequence of the fact that species is one of the obligatory ranks listed in Art. 3. The name of a genus, or subseries, does not replace that of the species, but both names continue in use as correct names, whereas in the case discussed in the previous paragraph the subspecific name is replaced by the specific name as the correct name of the taxon.

(iv) New names for taxa which have been described but the description is not accompanied by a validly published name. There may be no name at all, a prelinnæan name or one published before the later starting point of the group concerned, a vernacular name, one of inadmissible form, or one published since 1 Jan. 1935 but with the diagnosis not in Latin. In most of these cases the existence of a separate taxon was recognised by the author to whose description reference is made rather than by the author validly publishing the new name. Nevertheless, from the standpoint of botanical nomenclature, they had no existence, for there was no name, not even an illegitimate one, by which they might be referred to; they should accordingly be regarded as new taxa for the purposes of the Code. On this view, the loophole to which Bullock refers — that even after 1 Jan. 1935 a taxon was no longer new after it had been given a non-latin diagnosis and hence reference to that diagnosis made the name validly published under Art. 32, Art. 34 not applying — was never open, even in the Cambridge and Stockholm Codes, and this was the view of the Paris Congress. The types of names which fall under this head, in contrast to cases (i), (ii), and (iii), are not the types of previously and validly published names.

(v) New names for taxa which have been described under misapplied names. In such cases reference is made not to the original description which accompanied the previous name but to one published under a later misapplication of it. It is

the author of the new name, not the author of the description to which he refers, who recognised the taxon as separate, and there can be no question but that the new name is the name of a new taxon. Here, as in (iv), the type of the new name is not the type of a previously and validly published name.

The above five categories cover all the cases where a new name is given valid publication by reference to a previously published description. The conclusions reached about them can be generalised in the statement that a new name is the name of a new taxon unless its type is the type of a previously and validly published name which it is published to replace. This is in accordance with established custom, for the new name in cases (i), (ii), and (iii) would be termed by most authors "nom. nov.", "comb. nov.", "trans. nov." or "stat. nov.", whereas those in cases (iv) and (v) would be designated "sp. nov.", etc., according to rank. It also conforms to Art. 35, which applies (if "a name of a new taxon" in that Art. is so understood) to all names whose type is not that of a previous validly published name. To obviate any possibility of misunderstanding, it would perhaps be well to include a definition to this effect in the Code, and I therefore propose the following addition to Art. 34*:

"Note: A new name is the name of a new taxon unless it replaces a previously and validly published name with the same type."

It is perhaps worth pointing out that this will provide guidance where both a description and a reference to a previously published name and description accompany a new name. If the form of the publication is such that the type of the new name is the type of the previous one, the new name is not the name of a new taxon; otherwise it is.

If the above conclusion as to what is a new taxon is accepted, it is seen that the statement of Bullock's quoted in the first paragraph of this note misinterprets Art. 34 and that most cases where a new name is accompanied by a reference to a previously published description do not fall within the scope of that Article. Bullock's statement that they do is the main basis of his argument that Art. 34 should be amended, but the wording he proposes would have the effect of making reference to a diagnosis published before 1 Jan. 1935 but not in Latin sufficient for valid publication of names of new taxa, i.e. in cases (iv) and (v) above, and the desirability of this alteration in the effect of Art. 34 will have to be decided at the next Congress.

The majority of botanical taxonomists have always considered that the taxon to which a name referred should be indicated by a description of its diagnostic characters in Latin. The minority who were not prepared to act in accordance with this view was for many years so large and included so many leading workers that their work could not be ignored. By 1930 (for phycologists, 1954) this minority had shrunk to a very small number of botanists whose work was generally considered of little importance. It was accordingly decided that it was practicable to include in the next edition of the Code a requirement that all future descriptions should be in Latin. It was clear, however, that such a provision could have no retrospective effect on the status of names already validly published, and that it was essential that the indication of the characters of the taxa to which they applied, whatever the language of the description or even if it were an illustration with analysis published before 1 Jan. 1908, should continue to suffice to validate any new names or combinations for those taxa. Chaos, both in nomenclature and typification, would otherwise ensue.

There is, on the other hand, no necessity for descriptions without validly published names or those attached to misapplied names to have any status at all. When a name

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* Proposal no. 21 submitted to the 9th International Botanical Congress, Montreal, 1959.

is proposed for a taxon to which such a description applies, it is immaterial whether the author refers to that description and so makes the specimen on which it is based the type of his name, or provides a new diagnosis and type. If he does the second, no previous validly published name is relegated to limbo, and no previous type superseded. If it is accepted that as many names as possible should be associated with Latin descriptions — and that is the principle on which Art. 34 is based — then clearly the Code should provide that names for the taxa under discussion should require for valid publication to be accompanied by a Latin diagnosis or a reference to one. Art. 34, as at present worded, does require this; Bullock's proposed amended version does not.

The only argument for accepting Bullock's proposal would be that the custom of accompanying a name of a new taxon with only a reference to a description without a validly published name or one attached to a misapplied name published before 1 Jan. 1935 and in a language other than Latin was so well-established and widespread that a provision in the Code which disallowed it would invalidate many names and would be ignored. There are comparatively few descriptions without validly published names in the literature, however, and although misapplied names are more frequent, the number of new names based on the descriptions accompanying them is small. This argument has thus little weight. There is a further reason for discouraging reference to descriptions accompanying misapplied names, for these were necessarily not intended by their authors to be diagnostic, since they would not have indicated how the taxon differed from that to which the name they were errroneously using actually applied. For these reasons I consider Bullock's amendment unnecessary and undesirable.

The further and separate question raised by Bullock of whether "diagnosis" or "description" is the more suitable word to use in the provisions relating to valid publication, I intend to discuss in a wider context in the near future.

As a postscript I must add that, in those groups which have a starting point for their nomenclature later than 1753, any name, when first validly published at or after the new starting point, even when taken up from an earlier work, would be "a name of a new taxon" as defined here. Donk (Taxon 6: 245-256) argues that the opposite is to be deduced from the omission from the Stockholm Code of the "under another name" requirement which applied in previous Codes to validation by reference of names of genera, species, and infraspecific taxa, but not to subdivisions of genera nor to taxa of higher rank than genus. However, the fact that referring to a previous description not accompanied by a validly published name is now sufficient under the Code for valid publication of a name does not alter the fact that the taxon to which the name applies had no previous nomenclatural recognition. It furthermore has no effect on the typification of the first validly published name of a taxon whether the Articles of the Code which refer only to names of new taxa (Art. 34, 35, 36) apply to it or not; even the requirement that, from 1 Jan. 1958, the type must be indicated (Art. 35) leaves the author free to refer to an old description and make the specimen on which it is based the type of his name. The reasons which Donk advances for his point of view are therefore irrelevant to his main argument, which concerns the typification of names of Fungi taken up from works published before 1821. I do not find, therefore, in what he says any reason to modify the definition I have proposed here.

Dr. P. J. GREENWAY

B. Verdcourt (Nairobi)

At the end of March, 1958, Dr. P. J. Greenway, Botanist In-Charge, East African Herbarium, Nairobi, Kenya, retired after nearly thirty years work in East Africa. During this time he accomplished two major but complementary tasks. First, building up a regional herbarium which is the equal of any in the tropics and, insofar as the facilities which it offers to the public are concerned, considerably better than most; and secondly making a collection of ten thousand herbarium specimens of uniform excellence.

He was born in South Africa on the 8th March, 1897 but left that country for England in 1906. He was a student at the East Anglian Institute of Agriculture, at Chelmsford, from 1912 to 1914, and then at the Royal Horticultural Society's Gardens at Wisley for the next two years. From 1916 to 1919 he served in the Great War, both in France and Italy. After returning to Wisley for a year at the end of the war he entered the Royal Botanic Gardens, Kew, first as a Student Gardener (1920-21) and then as an Herbarium Assistant (1921-24). The following year he worked with Dr. Burtt Davy on the Flora of Transvaal. During the period 1925-1928 he was a Demonstrator in Systematic Botany at the Imperial Forestry Institute at Oxford. He received no formal university scientific training but, in 1951, the University of Witwatersrand recognised his botanical work by conferring on him an honorary degree of Doctor of Science and he received the award of an O.B.E. in the New Year's honours of the same year. His name is perpetuated in the generic name *Viridivia* Hemsley & Verdcourt (Passifloraceae).

He arrived at Amani, Tanganyika in April 1928.

The herbarium was much as the german botanists had left it, with a large number of plants unnamed and many bundled up in no order. The herbarium amounted to some 10,000 sheets and in that year 205 plants were received for naming. In 1957 the herbarium totalled 110,000 sheets, with possibly a further 20,000 named specimens awaiting mounting or laying away and, during that year, 8,000 plants were received for naming or in exchange. Until 1948, Dr. Greenway worked without any European assistants and the initial building up of the herbarium was entirely due to his energy. It is obvious that the immense amount of work needed to reorganise and build up the herbarium was not confined to normal office hours. He always insisted that service to the public came first and lists of determinations reached collectors with a rapidity that is most unusual in museum work! Visitors have always been received with unfailing courtesy. One of the most noticeable features of the herbarium is the meticulous way in which types are written up and other citations marked on the sheets concerned. The library accompanying the herbarium is rich compared with the size of the organisation mainly due to the fact that it is based on an exceedingly valuable nucleus from the former german Institute at Amani. Whilst in Tanganyika, Greenway also acted as an Honorary Forest Officer.

Dr. Greenway's main interests have always been centred around ecology and collecting rather than pure systematics. He has made considerable collections in Zanzibar, Pemba, Mafia and Northern Rhodesia, as well as in the three East African territories, and has always made a point of collecting in fours. He never gave his numbers to unicate specimens or only very rarely; such things being brought back and given herbarium numbers.

Sets of his plants are at Kew and Pretoria as well as at Nairobi and a further set distributed to a variety of institutions (according to the nature of the specimens)

such as the Imperial Forestry Institute at Oxford, Brussels, Missouri and other places. One of his major tasks was to enumerate the plants growing in cultivation at Amani which possessed a botanical garden of unrivalled excellence. The results of this survey have never been published but are available in a large typescript of which

Dr. P. J. Greenway (East Africa High Commission Photograph)

several copies are in existence. A similar typescript covers his exceedingly interesting survey of Mafia Island. The reason that these surveys have not been published is due to the lack of encouragement afforded by the authorities. In his early days his pioneer work was not always assisted as it should have been. His collections will, however, form a nucleus for all work done in E. Africa. Scarcely any genus can

be elaborated without citing at least one of his specimens. It was an intense disappointment to him when it was decided by the "powers that be" to move the scientific research station from the beautiful surroundings of Amani to Nairobi, a most uncongenial locality with all the disadvantages of a large town. The abandonment of the outstanding collection of plants in cultivation at Amani is a crime on the part of the authorities which neither he nor most other lovers of nature will ever forgive or even understand.

Dr. Greenway's contributions to literature have been rather few compared with some other tropical workers but they include two editions of an excellent Swahili dictionary of plants, ecological papers concerning Mt. Hanang and Mpwapwa (two areas in Tanganyika) and numerous short compilations on drug and food plants, timbers etc. published in the local agricultural journal. He rarely ventured into pure systematics and E. Africa is scarcely the place where such a course is advisable since, although the library is good, it is scarcely good enough for research purposes. One of his most valuable contributions were the notes he gave to Mr. Brenan when the latter was writing his voluminous Check List of Tanganyikan woody plants. Greenway's assistance was readily given to a very large number of authors. His meticulous reading of manuscripts has prevented numerous errors, in fact, in many cases, the manuscript has been so improved that his name would be more worthy of a place on the title page than the original author's. For several years he also edited the East African Agricultural Journal.

He will be much remembered for his overwhelming hospitality to innumerable visitors, both local and foreign, who frequently stayed with him for months. His houses always became popularly called "Hotel Greenway"! As an employer he was without fault and exceedingly kind. He has a remarkable aptitude for training native staff to whom he showed his usual patience and kindness. I know that all my colleagues both here and at Kew will join me in wishing him a long and happy retirement during which we hope he will be able to continue his valuable collecting and to write up many of the things for which he has never previously found the time.

LINNAEUS ON MICROFICHE

H. L. de Mink (Stockholm)

Microphotography has already been used in botany for several years. Microfilms are made of unobtainable books and periodicals, herbaria, etc. Especially during the war much that was regarded as irreplaceable, such as many manuscripts of Linnaeus, were microfilmed as an insurance against their destruction.

As a means of documentation however, a daily reference collection on microfilms has never become popular, although the film is developed to a great extent and readers of many types are available. Nevertheless, nobody takes a microfilm voluntary. This is due partly to the psychological barrier which must be overcome when using a reading device, and also often because the use of a filmreader requires kind of technical "feeling" that botanists are not familiar with. To place a filmwheel in a reader, to wind and rewind until the wanted page is found, is tiresome and time-wasting.

During the last few years, however, a new development of microtechnics has brought a more practical method of applying this outstandingly useful principle.

Microfiche is a flat sheet of transparent film, 9 × 12 cm on which is reproduced from 30 to 100 pages, and which, by bearing a readable title can be handled as a

catalogue card; a white cover, which leaves the title visible, protects the fiches from scratching. The flat form makes them easy to use, to file, and to mail. Reader devices for microfiche are most easy to handle. The fiches can be changed in a few seconds and are kept safely between two glasses. This "glassbook" can be moved freely in front of the lens and so any wanted page can be brought into view in a few moments. Readers for microfiches are cheap, between US$ 50-60. Small pocket viewers are available even for US$ 6.90.

Most of the readers are portable and give a clear sharp image on the writing desk, which is less tiring than one on mattglass screen. A small drawer or even a cardbox on the writing desk files the necessary literature that you are not able to buy or to borrow and keeps it nearby.

This system is used at many universities and already many botanists use the fiches with much satisfaction. In several institutions, as in the "Rijksherbarium" in Leiden, special reading rooms are equipped with small simple readers to be used by students.

Many libraries use microfiche as a replacement for loaning important books, which they keep safely on their shelves, while the borrower is not restricted to a limited borrowing period but keeps the work in his collection. For a small sum (only $ 0.50 per fiche) unobtainable books can become ones property.

As many universities and institutions are using microfiche, a large quantity of important books is becoming available on microfiche. An international centre has been organized to compile and make them available for all scientists over the world. This Centre, International Documentation Centre, located in Stockholm, contributes also to the collection itself and encourages other institutions to record certain important publications. All titles available on microfiche or microcard are classified and appear in a monthly catalogue "Micro Library".

Through "Micro Library" also books which cannot otherwise be traced can be enquired after.

In the field of botany all printed works of Linnaeus will become available and some of his most important manuscripts. The Centre would be very grateful for any indication of which books it would be worthwhile reproduce on microfiche and add to the monthly catalogue "Micro Library", listing all publications — even periodicals — on microfiche. It already includes, besides Linnaeus, many other rare botanical books of, for example: Roth, Scopoli, von Haller, Gray, etc.

If there is enough interest, it is probable that the whole Linnaean herbarium will be recorded on microfiche. This collection of 14.000 specimens will cost US$ 500-700. The Centre awaits preliminary reactions with much interest.

A project is planned to record herbaria and adventives to a vast extent, whose exchange will in this way be made easy. For this project the Centre will be able to provide many facilities for the organisation and recording. In its "Micro Library", which reaches all important libraries, the Centre has a good means for publishing and distribution.

Another project which the Centre has put on its programme is the publication on microfiche of scientific studies, reports, theses, and lectures that are not suitable for publication in periodicals or other printed form. This is the case if:

a. the field of the study covers a range too narrow to allow publication in a periodical.

b. if the nature of the copy is not suitable for printing: too many photographs, diagrams, formulae, drawings. For a microfiche edition the records are made directly from the original typewritten text and the original photographs, drawings, etc.

International Documentation Centre publishes all studies in any field, sent to the Centre. The titles, together with a short abstract are published in "Micro Library".

The subscription to "Micro Library" is kept very low, (US$ 4.—). This new periodical will be of much use to all botanists in helping them to obtain literature not otherwise available. Also its projects for recording herbaria, unpublished materials, reports and studies, deserve our attention and support.

FLORA EUROPAEA — A PROGRESS REPORT

V. H. Heywood (Liverpool)

Nearly a year has elapsed since the Flora Europaea project was made public. Literature, including sample pages, was addressed to as many Botanical Institutes and Gardens in Europe as could be traced and over 300 centres were written to, chosen to give as great a coverage as possible. We would be glad to hear from any interested institution or individual who has not yet had access to the information circulated. Only a few botanists outside Europe were approached, the aim at this stage being to test European opinion, as this is a European Flora and therefore depends primarily on the support of European botanists. Nonetheless the publication of my previous article in this Journal (Heywood, 1957) brought the project to the attention of colleagues all over the world as has become evident from correspondence received.

The Committee, although confident itself of the need for a European Flora, was anxious to obtain opinions from as many colleagues as possible, both on the general desirability of the Flora and on points of detail such as the language in which it should be published *. It was therefore a matter of considerable pleasure to receive such an encouraging response. There has been an almost unanimously favourable reaction to the major conception of the Flora. Not all the details have been approved — it would have been miraculous if they had — but the general outline seems to have proved acceptable.

Support has been received not only from Europe but from other continents; nor has interest been shown by taxonomists only but by ecologists, phytogeographers, horticulturists, educationists and others. Several colleagues and friends not directly concerned have taken the trouble to let us have their opinions and suggestions.

As a result there is now a steady flow of correspondence containing many helpful suggestions, criticisms and ideas; often these are in direct conflict with one another, and it has become increasingly clear that there is no possibility of constructing a scheme which will satisfy in detail all our correspondents. It pays great tribute, we feel, to the good judgement of our advisers that only on very few occasions have we been subjected to any considerable national pressure. There has, indeed, been a merciful lack of parochialism in the correspondence; nearly everyone has considered the Flora from an international viewpoint and, although making quite explicit their own national and local opinions, has not sought to press them without reference to the European situation as a whole. Political feelings have no place in a project of this nature and they have never made their presence felt. All this has made the task of the Committee very much lighter and we are consequently grateful.

* I use the term advisedly — more than one language will be employed in writing the Flora; the final text can be prepared in any one of them. Bentham and Hooker's *Genera Plantarum,* to cite but one example, was written in English but translated and published in Latin.

Although we did request opinions on the specific question of language, it was surprising to find just how high feeling on this aspect of the Flora runs. Latin or English, we felt, were the only possibilities for the language of publication. No other language has been suggested. The advantages and disadvantages of each language may be summarized. In favour of Latin, of course, is its universal appeal. Latin is supposed to be still the *lingua franca* of taxonomists. It is moreover completely neutral with no nationalistic implications or overtones. It is readily comprehensible and has a ready-made technical vocabulary for taxonomic usage. Most taxonomists, whether or not they approve of it, have to consult to some extent works written in Latin. On the question of brevity there appears to be little advantage either way. What might be saved (and this is by no means certain) in descriptions might well be lost in circumlocutory inventions to which one would have to have recourse in comments and observations. One of the disadvantages is that many taxonomists have only a limited knowledge of Latin, some none at all. It is pertinent to cite the reaction of a senior colleague at a leading herbarium. His plea was to avoid Latin at all costs: he ruefully confessed that he had to spend a considerable part of his time translating from and to Latin for more junior staff. Even more strongly expressed appeals in the same vein have been given. More important, however, the Flora is not intended exclusively for taxonomists, or even botanists, and so the status of Latin as the taxonomists' *lingua franca* loses its force. Again, Latin, as we are so often reminded in other academic spheres, is a dead language, and one cannot help wondering how often accuracy is sacrificed for convenience. The tendency is to use a ready-made phrase or expression which approximates, but no more, to the concept which it is intended to express, instead of seeking or constructing a more precise phrase. All taxonomists describing new species in Latin (unless they are also classical scholars) must know this feeling. It is often argued that Latin descriptions 'write themselves', because of the stereotyped botanical 'dog Latin' in common use, but how often do such descriptions run away with themselves in the writing?

The merits and demerits of English are more easily summarized. English is the most widely used living international language, as is acknowledged in most other spheres of activity. It is widely understood and used as the second language of several countries: it is also the mother tongue of many countries outside Europe which will use the Flora. There are two principal objections, which would apply to any living language, — firstly, a knowledge of English is very restricted in some areas of Europe; and secondly, its nationalistic implications.

All these opinions have been expressed by our correspondents, but the division between them still maintains a fairly even balance. We have therefore decided that there must be an edition in English, and we hope to be able to arrange for a Latin edition also if funds become available.

Perhaps the greatest change in the scope of the Flora as originally planned is the inclusion of Russia-in-Europe. From a phytogeographical point of view Europe is not an entirely natural area: the Mediterranean element is, for example, an important component, but to follow the phytogeographical limits of the Mediterranean flora would necessitate the inclusion of parts of N.W. Africa, the Nearer East, etc. Practical considerations have, however, been paramount in deciding on the area to be covered by the Flora. Accordingly we were of the opinion that to embrace European Russia, already so admirably covered by the nearly completed Flora of the USSR, would be to add unnecessarily to our labours by duplicating work already done. However, we have received so many opinions regretting this decision of ours that after much consultation we recently decided to include Russia-in-Europe. The principal arguments in favour are, firstly the almost unbelievable difficulties in making otherwise any

reasonable political or phytogeographical eastern limits to Europe as covered by the Flora. Secondly, Komarov's Flora is not apparently widely available, particularly the earlier volumes, and presents a formidable language problem to the majority of readers outside Russia. It covers, moreover, the whole of the Soviet Union, giving a calculated total of 17,500 species, of which only a proportion is found in the European zone. A third reason is quite simply that with the exclusion of Russia the Flora Europaea would belie its title. The number of species which will be added to the Flora is difficult to estimate with accuracy, but is probably of the order of 1,500, thus making a grand total for the Flora of 16,000-17,000 species.

Other changes in the geographical limits of the Flora include the addition of the Azores, and the recognition of the Balearic Islands as a geographical division distinct from Spain.

Changes too have been made in the method of indicating geographical distribution. It was originally planned, as shown in the sample pages, to give tables at the end of each volume detailing the presence or absence of all species in each country of Europe. Although few criticisms have been levelled at the form of these tables, we now feel that it would be more satisfactory to have all the geographical data together in the text, so avoiding having to turn to the end of the volume each time details were required. The tables would be expensive to produce and what is more important would require a large amount of space — over 150 pages per volume. The tables will now be replaced by two-letter abbreviations for each territory which will follow the generalized summary of distribution.

A few more references must be made to geographical problems. We still receive many requests for the inclusion of the world distribution of species and for an indication of the world total number of species in each genus. It is easy to appreciate the logic behind such views — we say where a plant grows in Europe but not what its position is in relation to the world flora, and this is meant to be a Flora to put facts in perspective. There are two points to be made here. Firstly, one must not confuse a Flora with the results that may be derived from it. In other words the Flora Europaea should become an invaluable source for countless further studies in the fields of phytogeography, etc., but it is not the purpose of the Flora to anticipate these, nor to convey the sort of information which text books and handbooks supply. It would also be convenient to know the number of genera in a family and details of their distribution and so on, but these facts can be ascertained from other works (insofar as they can be ascertained at all!). A second, and more serious, practical consideration is the enormous amount of time and research which would be required to give this information with any accuracy; very much greater resources than those needed for the whole of the rest of the Flora would be necessary for undertaking this single aspect. In many Floras the data are compiled uncritically from those which can be obtained with no great trouble from other works, and an error once made is repeated many times. The facts of distribution are difficult enough to ascertain for individual countries, how much more so for the world!

One of the commonest requests we have had is for as detailed information as possible on the ecological characteristics of species. So insistent have these been that the heading 'Ecology' has figured on the agenda at most of the meetings of the Editorial Committee, but always we have been forced to the same conclusion — that in only a few cases can any useful ecological information be given. The importance of ecological data is now well recognized and we have no intention of denying this, but in the case of the Flora covering such an ecologically diverse area as Europe the problems are formidable. One of the principal reasons for the emphasis on ecological data in taxonomy has been the vast body of genecological evidence

which has been built up over the past few decades, revealing that most taxonomic species are made up of numerous ecologically adapted components or ecotypes. Put another way, the area of a species is made up of a mosaic of different habitats. In wide-ranging species there is a greater likelihood of ecological diversity. The same result is obtained in species with wide ecological amplitude where the components are not ecotypically adapted. Even assuming that the requisite data were available (and quite clearly they are not) the resultant corpus of information would be too extensive to be included in the Flora. In some cases it would run to perhaps a page or more! Still assuming that we possessed the data, it could be argued that it might be summarized, but this would lead to the use of expressions such as 'occurring in a wide range of habitats' which would add little to the value of the Flora — as information it would be of small use, as an aid to identification possibly even less.

The situation, however, is that we now know or can predict the inadequacy of the available ecological data for the majority of wide-ranging species. We could utilize what *is* known but it would be in the full knowledge of its unreliability. With very few exceptions we just do not know what the ecological characteristics of species are from one end of Europe to the other: we can perhaps supply them for many countries, possibly for the majority, but if we are in doubt even about one country and fall into error thereby, users of the Flora, by relying on ecological features, may be led into errors of identification. And if we are to give ecological data on which no reliance can be placed, then the whole point of their inclusion is lost.

To drive this home more clearly it is worth mentioning that we were at a loss after much reflection to find more than a few species which occupied consistently throughout Europe the sort of habitat normally attributed to them in Floras. Within the limited experience of the Committee alone, most examples proposed were known from personal acquaintance by at least one member to occur in some areas in 'abnormal' habitats. In fact, some of the examples given by correspondents by way of illustration were found on consideration to suffer from the same defect.

As a general rule, the more restricted the range of a species, the more chance there is that its ecology will be uniform. It is in such cases that ecology will normally be mentioned — for example, in endemic chasmophytes so frequent in the Mediterranean flora or in species restricted to alpine screes. On the other hand some very widely ranging species are of marked ecological type, aquatics, for example, such as *Elodea canadensis*.

In general the most we can promise is that ecological data will be given in the Flora only when the facts can be satisfactorily ascertained and presented concisely yet meaningfully.

Other proposals have been made — for the mention of floral elements, altitudinal zones, etc. The major difficulties here are in delimiting these adequately and in finding a generally accepted terminology; the altitudinal range of many species is narrowly restricted, but we feel that it would be more accurate to give this in actual figures rather than by reference to zonation. One need only think of the confusion surrounding the use of the terms 'alpine', 'alpinoid', 'subalpine' and 'prealpine', and the inapplicability of, say, Central European zonation to the Mediterranean zone.

Our decisions on synonymy have been slightly modified. A complete monographic synonymy for each species is clearly out of the question, as this would mean heavily overloading the text with bibliographical details of interest only to a few specialists, as well as extending the number of pages and the indexes beyond the realms of practicability. The limitations we have therefore set upon synonymy are explained in a separate paper (Heywood, 1958a) to which the reader is referred for further details. What we aim at is the inclusion of sufficient synonymy to make the nomen-

clature we adopt readily comprehensible to as many users of the Flora as possible, by giving the names with which they are likely to be familiar in a number of major, commonly consulted works, such as Hegi's *Illustrierte Flora von Mittel-Europa.* This synonymy will be given in the text, not in the index only as previously planned. As with geographical data, the consensus of opinion is that most of the details concerning species should be brought together in the text, and we have decided to do this. It will not be possible, however, to include in the text the synonyms given by all or even the leading Floras of each country. What we will do is include in the index those names which are accepted in standard Floras when these are different from those adopted in the Flora Europaea. By 'standard Floras' we mean those which are generally regarded as being the most widely used and acknowledged in each country or territory concerned. A list of these will be published separately.

Synonyms of subspecies will not be given in the text, although some (binomials) will perforce be incorporated in the index. To enter upon the complexities of infraspecific synonymy would be an intolerable burden and again add quite considerably to the size of the Flora. One concession that we have made with regard to subspecies is the mention of their place of publication (assuming that this can always be traced!).

Nomenclature will, as far as can be determined, follow the current International Code. Although individually we may disagree, as do many others, with certain features of the Code, we have no intention of using the Flora as a platform for the introduction of special views on nomenclature. The flora of Europe has been so intensively worked, in individual compartments, that a synonymy of truly alarming proportions has been built up. Within the last decade or two great attention has been paid to this source of trouble, and major studies have been made by several writers including Amaral Franco, Dandy, Hylander, Janchen, Mansfeld, Rothmaler and others. More frequent typification studies and changes in the International Code of Nomenclature have also had their effect on the situation, and although we have passed through a phase in which no two Floras published recently appear to use the same names for even common species, it now seems that we are reaping the benefits and entering upon an era of stability. Most of us feel that upheaval followed by stability is far better than continuous change due to lack of sufficient investigation. Various technical problems bound up with nomenclature, the interpretation of binomial subspecies, for example, have still to be resolved, and our views on these will be published separately.

In a Flora involving more than one author there are several matters on which uniformity will never be achieved: one of these is the delimitation of genera, species and infraspecific categories. No two taxonomists hold quite the same concepts on these vital problems; some taxonomists retain an essentially morphological tradition although they may recognize the importance of modern experimental or genetical data and theories; others lean heavily on genetic data and largely discount morphological evidence; others attempt a synthesis of both kinds of data; and all intermediate positions and emphases are possible. It is not at all certain that the categories are valid or adequate, or sufficient in number of nature. These are problems which are beginning to occupy many taxonomists and cytogeneticists today and there seems little likelihood that they will be even partially resolved before the Flora is completed.

Although, as I ventured to say in my previous article, there is a wide degree of agreement among practising taxonomists on these matters, this does not mean unanimity, nor is it at all easy to express coherently wherein this broad concurrence lies. What the Editorial Committee has been able to do is produce a practical guide with examples. These will be found in a separate memorandum (Heywood, 1958a).

The alternative would seem to be the publication of an extensive treatise of taxonomic principles such as van Steenis (1957) has found necessary in connexion with the *Flora Malesiana*, of which he is General Editor. Any such document put out by the Editorial Committee of the Flora Europaea would be unilateral, the product of an individual member, for it is highly unlikely that agreement on such a scale of detail could be attained by a committee of seven members. We have no wish to criticize van Steenis's admirable work: the Flora Europaea is, however, organized along very different lines from the Flora Malesiana. Moreover the body of experimental and cytogenetical experience has a very much more direct application to the European flora than to a tropical flora, and it is as a consequence of this that the chances of agreement are so slender.

The taxonomic treatment of ecotypes, polyploids, cryptic species, apomictic complexes, etc. is far from being worked out. Obviously some arbitrary decisions will have to be made. Perhaps the greatest difficulty lies in the apomictic groups, and the whole question is being thoroughly studied in conjunction with experts. Promising lines of attack have been suggested, but they have been applied so far on only a very limited scale. We can, however, reiterate what we do *not* intend to do, although we are not yet in a position to say what positive action we will take. We will not describe or even list the several thousand apomictic taxa of *Hieracium*. If a detailed treatment of European *Hieracium* is wanted, we feel that this is a matter for a separate monograph. A further difficult problem concerns the treatment of complex groups where normal criteria are either inapplicable or may lead to the description of an inconveniently large number of species.

In an attempt to deal with some of these difficulties what is known as the aggregate species (or species aggregate) convention has gained currency in recent years. The species aggregate is, however, open to much misunderstanding, and while we recognize the need for some aggregation device we have decided to adopt a method which we believe combines some of the advantages of the species aggregate with few of its disadvantages. One of the principal reasons for the use of aggregates is for the convenience of the non-specialist, or at least non-taxonomist, who, faced with the identification of material belonging to a complex of microspecies of difficult taxonomic descrimination, could at least indicate the aggregate to which it belonged if further precision was not possible. There are other uses of the aggregate convention which we have covered by the use of observations following species, and other means.

In the Flora critical microspecies may be grouped together in an artificial assemblage (grex). The grex will not be described, as an aggregate would be, but the characters which separate it from other species or groups of microspecies will be given. A key will be given to the component species *in the text* but otherwise they will be treated exactly as other species.

We hope by these suggestions to achieve a reasonable degree of uniformity in the Flora, although many taxa that have proved difficult taxonomically may receive an *ad hoc* treatment.

The format of the keys has been changed from the bracket type of the sample pages to the numbered indented (yoked) style.

In addition to the Advisory Editors who figure in the previously circulated manifesto, we are glad to be able to add J. E. Dandy, Keeper of Botany, British Museum (Natural History), H. Gaussen, Professor of the Faculté des Sciences, Toulouse, and G. Taylor, Director of the Royal Botanic Gardens, Kew.

A major difficulty in writing a Flora of Europe is in noticing and obtaining copies of all the papers published on the taxonomy of the European flora. I included a request for reprints at the end of my previous article. The results have not been

entirely satisfactory: many colleagues have gone to great lengths to send us not only recent papers from their Departments, but those going back many years; others regularly send us separates of their papers as published. We do not, however, seem to have spread our net widely enough and we would welcome the assistance of all readers of Taxon in ensuring as full a coverage of literature as possible. The exchange of separates is one of the most pleasant aspects of research, and we fully appreciate that our request is one-sided in that we can offer little in return, but plans are now in hand for the abstracting of European taxonomic literature, so that the more reprints we receive, the better and more useful the abstracts will be to all concerned.

With the exception of a few large genera, most of the groups covered by the first volume of the Flora have been allocated and are now being written, and already the first manuscripts are being circulated to our advisers. We clearly have a long way to go yet, but if we are to judge by the co-operation we have received so far, the task ahead of us will be a great deal easier than at one time we dared to hope.

TYPIFICATION OF THE GENUS HYDNUM (HYMENOMYCETES)

Zdeněl Pouzar (Praha)

In a recent paper Dr. M. A. Donk (1956) analyses in detail the history of the genus *Hydnum* L. ex Fr. and suggests that the type of this genus is *Hydnum repandum* L. ex Fr. This typification is in accordance with recent practice, but from the nomenclatorial point of view it is not fully acceptable, for the reasons given below.

Donk's arguments are mainly based on the pre-Friesian history of the genus *Hydnum* L. ex Fr.This was given valid publication in Fries, Systema mycologicum I. (1821). It does not appear from the Code that what was published before a taxon was given valid publication should be the basis of the selection of a lectotype. Logically, the definitive bases for typification are the description, the author's annotations and the list of species in the publication where the taxon was validly published.

Both candidates for selection as the type of *Hydnum* L. ex Fr., viz. *H. repandum* L. ex Fr. and *H. imbricatum* L. ex Fr., are equally eligible in so far as both are included in Fries, Systema mycologicum I (both are also in Linnaeus, Species Plantarum ed. I 1753). Hydnum repandum is, however, considerably handicaped by Fries' (Syst. mycol. I. p. 597) mentioning it in a paragraph entitled "Aberratt." where he noted: "In H. repando aliisque paucissimis aculei in tubulos incompletos abire visi." This difference is regarded as of minor importance by modern taxonomists, but for typification only the taxonomic ideas of the original author (here Fries 1821!) are important. In the paragraph entitled Aberratt. or Aberr. Fries always drew attention to species which deviate from his conception of the genus. For example in the genus *Merulius* Haller ex Fr. he mentioned in this paragraph *M. lacrymans* (Wulf. in Jacq.) ex Fr. and said that it deviates by having brown spores. In the genus *Agaricus* L. ex Fr. he mentions in this paragraph tribus Gomphus and tribus Coprinus which he subsequently (in Epicrisis 1838) separated from Agaricus as the genera *Coprinus* Fr. and *Gomphidius* Fr. Evidently the species referred to in this paragraph are not eligible for selection as lectotypes, because elements that the original author considered atypical cannot be chosen as lectotypes.

Consequently S. F. Gray's (1821) emendation of Hydnum, which is the first one, is not a misapplication, as suggested by Donk (1956), but a justifiable emendation of Fries' conception.

The only possible typification of Hydnum is by *Hydnum imbricatum* L. ex Fr. and therefore the correct name for *Sarcodon* P. Karst. (Thelephoraceae sensu stricto) is *Hydnum* L. ex Fr. em. S. F. Gray and for Hydnum L. ex Fr. em. Pat. (Cantharellaceae) the correct name is *Dentinum* S. F. Gray. The last arrangement has been accepted in literature only by Miller et Boyle (1943), Snell (1945), Murrill (1951) and Pouzar (1956). The conservation of Hydnum in the sense of *Sarcodon* P. Karst. is unnecessary, because the division of fleshy hydnums into many small genera is at present not commonly used by applied botanists but is only a matter for taxonomic specialists.

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THE CONSERVATION OF CATENELLA Greville

Peter S. Dixon (Liverpool)

In recent years, many old and well-established algal generic names have been shown to be illegitimate or incorrect when the rules of nomenclature are strictly applied. As a result, various proposals have been made for the conservation of these names (Papenfuss, 1947, 1950; Silva, 1952), some of which have been accepted.

The genus *Clavatula* was created by Stackhouse (1809), its single species, *C. caespitosus* Stackh. being based on *Fucus caespitosus* Stackhouse (1797) *non* Forskål (1775). That it is so based is only indirectly apparent, for there is no direct reference but only a footnote to the generic description reading "*F. clavatus* (l'Amouroux) species hujus generis ....", and a statement in Stackhouse's (1816) later work under the name of *Fucus clavatus* Lamour. "Parvulum hanc speciem sub nomine *F. caespitosi,* olim descripsi ....". In this same work (Stackhouse, 1816), in the introduction, the genus is renamed *Clavaria* and the species *Clavaria caespitosa.*

It has been assumed that both *Fucus caespitosus* Stackh. and *F. clavatus* Lamour. were synonyms of *F. pusillus* Stackhouse (1795), which is now placed in the genus *Gelidium* Lamouroux (1813) as *G. pusillum* (Stackh.) Le Jolis. *Gelidium* Lamour. has therefore been conserved against *Clavatula* Stackh., and also against *Cornea* Stackhouse (1809), as a result of proposals by Papenfuss (1947) and Silva (1952).

The discovery of type material of *Fucus caespitosus* Stackh. shows that the previous opinions about its identity are incorrect. There are two specimens named *F. caespitosus* by Stackhouse in the Herbarium of the British Museum (Natural History), both of which are of the entity now known as *Catenella repens* (Lightf.) Batt. The conservation of *Gelidium* against *Clavatula* Stackh. is thus incorrect, although its conservation against *Cornea* Stackh. is still necessary. *Clavatula* Stackh. should therefore be deleted as a *nomen rejiciendum* against *Gelidium.*

On the other hand, the identification of *Clavatula caespitosa* with *Catenella repens* means that *Clavatula* is the correct name for the genus now known as *Catenella* Greville (1830). The latter is a well-established name in general use and it is proposed therefore that it should be considered for conservation.

Catenella Greville, Alg. Brit.: lxiii, 166. 1830.
T.: *C. opuntia* (Good. & Woodw.) Grev. (nom. illeg.)
(= *C. repens* (Lightf.) Batt.).
versus
Clavatula Stackhouse, in Mem. Soc. Nat. Moscou, 2: 95. 1809.
T.: *C. caespitosa* Stackh., op. cit.: 97.
Clavaria Stackhouse, Ner. Brit., ed. 2: x. 1816 (nom. illeg.).
T.: *C. caespitosa* (Stackh.) Stackh., op. cit.: xii.

Catenella appears at first sight to be not only incorrect but also illegitimate under Art. 64 (1), since Greville cited *Fucus caespitosus* Stackh., the type of *Clavatula*, as a synonym of *Catenella opuntia*, but he also cited it and *Fucus clavatus* Lamour. as synonyms of *Gelidium corneum* var. *clavatum* (Lamour.) Grev. As it is therefore not clear that Greville considered that the element which is the type of *Clavatula* belonged to *Catenella*, this name can be regarded as legitimate.

Greville cites *Fucus repens* Lightfoot (1777) also as a synonym of *Catenella opuntia*, based on *Fucus opuntia* Goodenough & Woodward (1797), and hence his specific name is illegitimate under Art. 64 (1).

It should be noted that *Clavaria* Stackh. is already listed as a *nomen rejiciendum* versus *Clavaria* Vaill. ex Fr. (Fungus), but the citation of its type there should be amended to conform with that given above.

I am indebted to Mr. R. Ross for assistance in the preparation of this note.

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——, 1797: *Nereis Britannica*, Fasc. 2, ix-xxiv + 31-70 pp., Bath.
——, 1809: Tentamen marino-cryptogamicum ..... *Mem. Soc. Imp. Nat. Mosc.* 2: 50-97.
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TYPE COLLECTIONS OF ALGAE

ADDITIONS

Joséphine Th. Koster (Leiden)

Bold, H. C.	Nashville, Tenn., U.S.A., Vanderbilt University (VDB) (private collection) and duplicated at Chicago, Nat. Hist. Mus. (F)
Collins, F. S.	part not represented at New York, Bot. Gard. (NY) in Berkeley, Calif., U.S.A., Dept. of Bot. (UC)
Dailey, W. A. & F. K.	Indianapolis (private collection)
De Candolle, A.	Genève, Conserv. et Jard. bot. (G)
Drouet, Fr.	Chicago, Nat. Hist. Mus. (F) and private herbarium

Dudresnay de Saint-Pol-de-Léon, A.	Bourbriac, Côte du Nord, France (private collection of L. Lebreton)
Eaton, D. C.	collection duplicated at Chicago, Nat. Hist. Mus. (F)
Franticek Novacek	in herb. F. Drouet
Gomont, M.	Paris, Mus. Nat. Hist. (PC)
Hall, E.	Chicago, Nat. Hist. Mus. (F)
Hansgirg, A.	Vienna, Nat. Hist. Mus. (W), mostly duplicated at Chicago, Nat. Hist. Mus. (F)
Hazen, T. E.	(1874-1940) — Chicago, Nat. Hist. Mus. (F)
Hussey, J. L.	(1862-1899) Lund, Sweden, Bot. Mus. and Herb. (LD) (her algae were described by J. G. Agardh); very few types in Adelaide, Australia, Bot. Dept. (AD)
Johnson, L. N.	Chicago, Nat. Hist. Mus. (F)
Mueller, F. von	Melbourne, Nat. Herb. (MEL)
Patrick, Ruth	Philadelphia, Acad. Nat. Sci. (PH)
Royers, H.	Chicago, Nat. Hist. Mus. (F)
Setchell, W. A. & Gardner, N. L.	Berkeley, Calif., U.S.A., Dept. of Bot. (UC), but numerous types not duplicated at UC are at San Francisco, Calif., Acad. Sci. (CAS)
Sprengel, K.	microscopic algae in herb. Royers at Chicago, Nat. Hist. Mus. (F)
Taylor, W. R.	Ann Arbor (private collection) and part (not duplicated) in Herb. Univ. Mich. (MICH)
Tilden, J. E.	part at Hesperides, Lake Wales, Florida (private collection) and part at University of Minnesota, Minneapolis, Dept. of Bot. (MIN)
West, W. & G. A.	Birmingham, England, Univ. of Birmingham, Dept. of Bot. (BIRM) and part (not duplicated) at London, Brit. Mus. (BM)
Wille, J. N. F.	Puerto Rico collections at New York, Bot. Gard. (NY)
Wilson, J. B.	London, Brit. Mus. (BM); Lund, Sweden, Bot. Mus. and Herb. (LD); Melbourne, Nat. Herb. (MEL)
Wolle, F.	the original collection divided (not duplicated) among Chicago, Nat. Hist. Mus. (F), Univ. of Pennsylvania, and herb. F. Drouet
Wood, R. D.	Kingston, Rhode Island (private collection)

I am grateful to A. H. Dizerbo, F. Drouet and H. B. S. Womersley for sending me these additions and corrections. Further information on Australian material will be found in: H. B. S. Womersley, A critical survey of the marine algae of Southern Australia I, *in* Austr. J. Mar. Freshw. Res. 7: 345-349. 1956.

NEWS AND NOTES

SOUTH AMERICAN BOTANICAL CONGRESS

The IIIrd South American Botanical Congress will be held at Lima, Peru from 11-19 May, 1958.

President: Dr. Octavio Velarde Nunez.

Secretary-General: Dr. Julio E. Lopez Guillen, Casilla 415, Lima, Peru.

NOMENCLATURE PROPOSALS

The following proposals were published in earlier volumes of Taxon. They are herewith submitted to the IXth International Botanical Congress, Montreal 1959.

F. A. Stafleu

21. H. W. Rickett, Taxon 4: 188. 1955: Art. 73, old 82. Proposal to add a note to the effect that in maintaining the original spelling of names, "J" and "V" must be changed to "I" and "U" respectively when they represent vowels, while the reverse changes must be made when consonants are required.

22. G. P. DeWolf, Jr., Taxon 5: 52. 1956: A proposal to conserve some subfamilial and tribal names. The present code provides in principle for the conservation of names in those ranks but a special decision is required to authorize the nomenclature committees concerned to take action along those lines.

(35) Proposal to substitute **Veitchia** H. Wendl. emend. Becc. versus *Veitchia* H. Wendl. in Appendix III, International Code of Botanical Nomenclature, and to substitute **Veitchia joannis** H. Wendl. as lectotype versus *V. storckii* H. Wendl.

Discussion: The name *Veitchia* H. Wendl. has been conserved over *Veitchia* Lindl. for a genus of palms imperfectly understood until recently but most widely known through the species *V. joannis*, cultivated in tropics of the Old World and the New World and at one time in glasshouses of Europe. When Green proposed the genus for conservation (Kew Bull. 1935: 529-30. 1935), she selected *Veitchia storckii*, first of four species, as the standard species, a choice currently reflected in the International Code of Botanical Nomenclature (1956). Pichi Sermolli (Beccari and Pichi-Sermolli, in Webbia 11: 99-101. 1955), Smith (Jour. Arnold Arb. 36: 274—75. 1955), and Moore (Gent. Herb. 8: 483-84. 1957) have pointed out that the choice of *V. storckii* was unfortunate since Beccari (Webbia 5: 76-79. 1921) had earlier emended the genus to exclude *V. storckii*.

Veitchia, as established by Wendland, included *V. storckii, V. joannis, V. subglobosa* from the Fiji Islands in that order and, in observations, *V. spiralis* from the New Hebrides. No type was designated. Only *V. storckii* was fully described and illustrated. The remaining species were described from fruit and seedlings (*V. joannis*) or from fruits only. In the necessarily cursory study of numerous genera proposed for conservation in 1935, it was natural to select *V. storckii* as standard species.

Green appears, however, to have overlooked the fundamental conclusions reached by Beccari in his paper of 1921 cited in her list of adoptions. Beccari had shown that Veitchia of Wendland included species of two genera. Accordingly, he erected *Neoveitchia* to include *V. storckii* alone (though he erroneously supposed that the fruit attributed to that species belonged to a true *Veitchia*, probably *V. joannis*). *Veitchia*, with three remaining original species, was not formally re-defined but differences from Neoveitchia are readily seen in the descriptions of three added species. The first clearly defined account of the two genera appeared in the work of Beccari and Pichi-Sermolli (1955) wherein Pichi-Sermolli commented at length on the typification of Veitchia. The two genera have recently been treated monographically by Moore (1957) who followed Pichi-Sermolli in his choice of *V. joannis* as lectotype. Thus the genus, which today contains 18 species with five in cultivation, was interpreted in its predominant historical and horticultural sense.

The generic description provided by Wendland does not apply in its entirety to *V. storckii* (though it does largely owing to the fact that flowers were known only for this species) therefore it is not obligatory to follow Green's selection of lectotype. Stability of nomenclature is best served by substituting *V. joannis* H. Wendl. as lectotype for *Veitchia* H. Wendl. emend. Becc. in the list of *nomina generica conservanda*. A fuller discussion is to be found in Gent. Herb. 8: 483-484 (1957).

Proposed by: H. E. Moore, Jr., Bailey Hortorium, Ithaca, N.Y.

(36) Proposal for the conservation of the generic name 7631 **Castilleja** Mutis ex L.f. Suppl. Plant 47 (1781) versus 7645 *Bartsia* L. Sp. Pl. 602 (1753); Gen. Plant., ed. 5, 262 (1754), both of the Scrophulariaceae.

A case similar to that of the much-discussed *Gerardia* L. and *Stenandrium* Nees is that of *Bartsia* L. and *Castilleja* Mutis ex L.f. Linnaeus included five species in *Bartsia* in Species Plantarum 602 (1753) and published the associated generic diagnosis in Genera Plantarum, ed. 5. 262 (1754). Of the five Linnean species of *Bartsia* (*B. coccinea, B. pallida, B. viscosa, B. trixago*, and *B. alpina*), four have since been transferred to other genera, and only *B. alpina* remains. The interpretation of *Bartsia* L. as "typified" by *B. alpina* has persisted to the present day, and the genus now includes perhaps fifty species.

In Prop. Brit. Bot., Int. Bot. Cong., Cambridge 1930 (1929), p. 166, Miss M. L. Green proposed the adoption of *B. alpina* as the "standard-species" of *Bartsia* L. In 1930 Pennell (Proc. Acad. Nat. Sci. Philadelphia 82: 14—15) showed clearly that the lectotype ("genotype") of *Bartsia* L. is *B. coccinea*, the only one of the five original species that fits the diagnosis in Genera Plantarum. Green's choice of a lectotype ("standard-species") cannot, therefore, be maintained because *B. alpina* "does not fit the original description as well as another of the original elements" (Paris code, Appendix IV, 4e). The lectotype of *Bartsia* L. is accordingly *B. coccinea*, a species now included in the genus *Castilleja* Mutis ex L.f. as *C. coccinea* (L.)

Spreng. *B. coccinea* is, in addition, the earliest nomenclatorially valid name for a member of *Castilleja*.

From this brief summary the conclusion is inescapable that the correct name for the genus *Castilleja* (some 200 species) is *Bartsia* L., and that the genus now called *Bartsia* stands in jeopardy of losing its long-established appellation.

There are, it would seem, three courses that could be followed in this unfortunate situation.

(*1*) Replace the name *Castilleja* with *Bartsia* L. The name of the taxon now known as *Bartsia* would then become *Alicosta* Dulac (1867). This course, involving possibly 250 nomenclatorial changes on the species level, is hardly practicable.

(*2*) The current interpretation of *Bartsia* L. is essentially that of Bentham ex A. P. Decandolle, Prodr. 10: 544 (1846). Conserve the name *Bartsia* Bentham ex A. P. Decandolle over *Bartsia* L. *Castilleja* would presumably then not be in peril, and the genus now known as *Bartsia* would continue to bear this name. If this course be followed, the name *Bartsia* would then be used in a sense contrary to that of its own original description. Quoting from Pennell (Monog. Acad. Nat. Sci. Philadelphia 1: 520. 1935), "I can conceive of no principle of nomenclature more fundamental than that its original description must control the subsequent use of any generic or specific name." With this opinion the present writer can but agree fully. The following statement from the Paris code (Art. 62) is applicable here: "A legitimate name must not be rejected merely because . . . it has lost its original meaning." For these reasons this course is not recommended.

(*3*) Make *Castilleja* Mutis ex L.f. a *nomen conservandum* over *Bartsia* L. in order to avoid perhaps 200 name changes that would result if the name *Castilleja* were to be replaced. Apply to the genus now called *Bartsia* the name *Alicosta* Dulac (1867), a suggestion made by Pennell (*loc. cit.*) who further commented, "... would it not be better to reject an old name altogether than to force it upon a species [i.e., *B. alpina*] which contradicts flagrantly the original generic diagnosis?" It is this course that is recommended in this proposal.

Proposed by: J. W. Thieret, Chicago.

NOTES ON IPOMOEA L.

My two previous notes on this subject (Taxon 6: 150 (1957) and Taxon 6: 231 (1957)) were in connection with the preparation of the account of the family Convolvulaceae for the Flora of Tropical East Africa. This account has involved me in deeper matters than I wished. Several replies have been received in answer to my plea for criticisms and the following erroneous views stated in my notes must be corrected.

In connection with my note on the typification of the various subdivisions of the genus *Ipomoea*, Dr. Meeuse of Pretoria, who has made a special study of the South African Convolvulaceae has pointed out to me that *I. oblongata* E. Mey. ex Choisy belongs to the genus *Turbina* Raf. He is making the necessary new combination in a publication of his studies that has been in the press for some time. My use of this species to typify the group *Integrifoliae* Choisy results in the latter becoming a synonym of *Turbina* Raf. I might add, that in common with several other genera in the family, *Turbina* does not have a recognisable facies and the species are linked together through the purely technical character "fruit indehiscent". I have followed other workers in making use of the genus merely for the sake of convenience.

Dr. van Ooststroom has kindly criticised my note on Morning Glories. It appears I have continued a blunder now hoary with age; I have misunderstood *I. hederacea* Jacq. and both species "B" and "D" mentioned on page 231 of my note are actually forms of *I. nil* (L.) Roth. Dr. van Ooststroom has examined *Burtt* 3727 and pronounces it to be quite typical *I. nil* in the sense long accepted by himself and other writers and as typified by me in the article mentioned. As previously stated, there is no doubt in my mind about the identity of *Burtt* 3727 with the sheet in the Linnean herbarium which I have chosen as the lectotype of *Convolvulus hederaceus* L. The latter is, therefore, not the same as *Ipomoea hederacea* Jacq., the common American species, which differs from *I. nil* (L.) Roth in having a shorter corolla and shorter sepals, the tips of which are spreading or recurved, not erect.

This error alters some of the views expressed in my original note and the following points must be made.

1. The American plant with small flowers known as *I. hederacea* Jacq. does not

occur in East Africa. *I. nil* does occur.

2. The description given under species "B" refers to *I. nil.* The "typical specimens" seen from Tanganyika certainly accord well with the Linnean specimen of *Convolvulus hederaceus* but as shown above, this is *I. nil.*
3. Under species "D" the remark "It differs from *I. hederacea* Jacq. in its much shorter sepals and corollas." must be deleted. There are several forms of *I. nil* varying considerably in these characters but the true American species has them shorter and not longer.

My knowledge of Dr. van Ooststroom's interpretations of the pre-Linnean plates quoted in my note, was obtained at second hand from a letter from another source, giving extracts from a letter written by Dr. van Ooststroom. Unfortunately, the extracts I received contained a slip. Dillenius' plate 83, fig. 96, which comprises two figures, represents *Ipomoea purpurea* (L.) Roth according to the views of Dr. van Ooststroom and not *Ipomoea nil* (L.) Roth as I previously stated.

These errors illustrate only too well the considerable danger of writing about problems in places where one is out of personal contact with large libraries and collections. Someone, however, has to start the discussion. There is likely to be further discussion on this subject since the species will have to be dealt with in several other floras which are in preparation. I do not see how the names in common use can be conserved except by the means I have already pointed out.

B. Verdcourt

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Mr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Tropical East Africa

R. A. Graham: *Orobanchaceae.* (7 pp., 1 plate). London, 1957.

Flora of Nevada

P. Train, J. R. Henrichs & W. A. Archer: Contributions toward a flora of Nevada. 45. Medicinal uses of plants by Indian tribes of Nevada. (Rev. ed.; 139 pp.). Beltsville, Md., 1957.

North American Viburnum

W. L. McAtee: A review of the nearctic *Viburnum.* (125 pp., 9 plates, with keys based on vegetative, fruit and bud characters, keys to varieties, descriptions, and notes on variation). Chapel Hill, N.C., 1956.

West Indian Lichens

H. A. Imshaug: Catalogue of West Indian Lichens. (153 pp.; an enumeration, with bibliography and notes on the location of of West Indian Lichen collections). Publ. as Bulletin of the Institute of Jamaica, Science Series, No. 6, 1957.

Flora of Suriname

Flora of Suriname, ed. by J. Lanjouw. Vol. 1 pt. 2 (pp. 93-292). F. P. Jonker: *Batidaceae* (concl.); L. B. Smith: *Bromeliaceae;* A. M. E. Jonker — Verhoef & F. P. Jonker: *Marantaceae;* A. L. Stoffers: *Phytolaccaceae;* T. G. Yuncker: *Piperaceae;* J. Lanjouw: *Chenopodiaceae.* Publ. by the Royal Tropical Institute, Amsterdam, 1957.

Flora of Paraná

J. Angely: 8. *Palmae* Paranaenses (7 pp.); 9. *Gramineae* Paranaenses (12 pp.). Curitiba, Paraná, 1957.

Flora of the Itatiaia

A. C. Brade: A flora do Parque Nacional do Itatiaia. (92 pp.; a phytogeographical sketch, with maps, drawings, and photographs). Publ. as Boletim no. 5 of the Parque Nacional do Itatiaia; Rio de Janeiro, 1956.

Australian Weeds

S. L. Everist: Common weeds of farm and pasture. (135 pp., 111 species are described and depicted). Publ. by the Queensland Department of Agriculture and Stock, 1957.

Antirrhinum

W. Rothmaler: Taxonomische Monographie der Gattung *Antirrhinum.* (124 pp., 9 plates; with keys, descriptions, and enumerations of specimens). Publ. as Beiheft 136 of Feddes Repertorium, Berlin, 1956.

Catalogue and statistics of the genera of Phanerogams

J. Angely: Catálogo e Estatistica dos Gêneros Botânicos Fanerogâmicos. 13: *Baccharidineae* (*Compositae*), by J. Angely; 14:

Piperaceae, by T. G. Yuncker; 15: *Violaceae,* by B. Sparre; 16: *Malpighiaceae,* by E. Pereira; 17: *Verbenaceae,* by H. N. Moldenke; 18: *Lobeliaceae,* by F. E. Wimmer; 19: *Cucurbitaceae,* by B. Martínez Crovetto; 26: *Amaryllidaceae,* by H. P. Traub; 27: *Flacourtiaceae* (incl. *Lacistemaceae*), by H. Sleumer; 28: *Myrtaceae,* by E. Kausel; 29-30-31-32: *Lactoridaceae, Eucryphiaceae, Gomortegaceae, Aextoxicaceae,* by G. Looser; 33: *Pittosporaceae,* by G. Cufodontis; 34: *Lauraceae,* by A. J. G. H. Kostermans; 35: *Meliaceae,* by M. Buchinger; 37-38: *Tetrachondraceae, Donatiaceae,* by G. Looser. Curitiba, Paraná, 1956 (13-19), 1957 (26-38). — All specialists are urged by the editor of this series to contribute the families of their special interest; each author will receive 100 free reprints.

Flora of North and Central Europe

Fr. Hermann: Flora von Nord- und Mitteleuropa. (vii + 1154 pp.). Gustav Fischer Verlag, Stuttgart, Germany, 1956. DM 98.—.

This book covers a very considerable portion of Europe, from Iceland, the British Isles, and the Seine to the Alps, the Carpathians, and the lower Danube; it deals with all native and naturalized vascular plants of this region. The descriptions are concise and largely confined to the keys; there are data on habitat and distribution (the latter rather detailed). The generic concept is sometimes unusually broad, which is particularly striking in such genera as *Polystichum, Panicum, Avena,* and *Pyrus.* Shortcomings are the complete absence of synonyms, the lack of authors' citations of genus names, the incomplete citations of species names (only the author of the basionym is given), and some minor points of nomenclature, e.g. the rejection of such names as *Luzula luzuloides* and certain "simplifications". There are also no data on flowering-time. The flora will prove to be most useful for those parts of Central and South-Eastern Europe that have never been covered by a modern flora in a Western language.

* * *

New Periodicals

Neue Hefte zur Morphologie, ed. by K. L. Wolf & D. Kuhn, publ. by H. Böhlaus Nachf., Weimar, Germany. Vol. 3 (1957) contains a paper by Th. Eckardt: Vergleichende Studie über die morphologischen Beziehungen zwischen Fruchtblatt, Samenanlage und Blütenachse bei einigen Angiospermen.

Monographs, revisions, etc. published in periodicals

J. A. von Arx: Die Arten der Gattung *Colletotrichum* Cda. Phytopath. Zeit. 29: 412-468 (1957). (With key).

C. R. Benjamin & C. W. Hesseltine: The genus *Actinomucor.* Mycologia 49: 240-249 (1957).

R. A. Blakelock: Notes on the flora of Iraq with keys — Part IV. Kew Bull. 1957 (3): 461-497. (*Portulacaceae, Ficoidaceae, Nyctaginaceae, Amaranthaceae, Chenopodiaceae, Theligonaceae*).

R. B. Channell: A revisional study of the genus *Marshallia* (*Compositae*). Contr. Gray Herb. 181: 41-130 (1957). (With keys, descriptions, maps, and illustrations).

R. C. Ching: *Cyrtomidictyum* Ching, a yet little known Chinese fern genus. Acta Phytotax. Sin. 6(3): 255-266 (1957). (With key, descriptions, and illustrations; text Chinese and English).

Id.: On the genus *Adiantum* L. of China with notes on some related species from neighbouring regions. Ibid. 6(4): 301-354 (1957). (With key and descriptions; Chinese with English summary and key).

W. B. Cooke: The genera *Serpula* and *Meruliporia.* Mycologia 49: 197-225 (1957).

A. Cronquist & D. D. Keck: A reconstitution of the genus *Machaeranthera.* Brittonia 9(4): 231-239 (1957). (With synopsis of the more evident species).

M. D. Ervin: The genus *Sebacina.* Mycologia 49: 118-123 (1957).

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J. W. Hardin: A revision of the North American *Hippocastanaceae.* Brittonia 9(3): 145-171, (4): 173-195 (1957). (With keys and maps).

R. E. Hatcher: The genus *Trichocolea* in North, Central, and South America — (*Hepaticae*). Lloydia 20(3): 139-185 (1957). (With key, descriptions, and drawings).

F. C. How: Revision of the Chinese *Meliosma.* Acta Phytotax. Sin. 3: 415-452 (1955). (With key; in Chinese).

Id.: A review of the Chinese species of *Derris.* Ibid. 3: 207-231 (1955).

F. C. How & C. N. Ho: *Sapindaceae* in the Chinese flora. Ibid. 3: 373-414 (1955).

R. A. Howard: Studies in the genus *Coccoloba,* V. The genus in Haiti and the Domi-

nican Republic. Jo. Arnold Arbor. 39(1): 1-48 (1958). (With keys and descriptions).

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Z. Iwatsuki: The genus *Hypnodon* and its allies. The Bryologist 60(4): 299-310 (1957). (With key to genera, and to the species of *Hypnodon*).

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H. E. Moore, Jr.: The cultivated Veitchias. Principes 2(1): 21-33 (1958). (With key and illustrations).

R. Neuhäusl & P. Tomšovic: Rod *Nymphaea* (L.) Smith v Československo. (The genus *N.* in Czechoslovakia). Preslia 29(3): 225-249 (1957). (Czech, with Russian and German summaries).

L. S. Olive: *Tulasnellaceae* of Tahiti. A revision of the family. Mycologia 49: 603-679 (1957). (With key).

R. E. Perdue, Jr.: Synopsis of *Rudbeckia* subgenus *Rudbeckia*. Rhodora 59 (No. 708): 293-299 (1957). (An enumeration, with keys).

A. Pilát: Přehled evropských druhů řádu prakyjankotvarých — *Protoclavariales* Heim (Conspectus specierum europaearum ordinis *Protoclavariales* Heim). Česká mykologie 11(2): 66-95 (1957). (With keys and descriptions; in Czech).

N. K. B. Robson: The genus *Hypericum* in Africa South of the Sahara, Madagascar and the Mascarenes. Kew Bull. 1957 (3): 433-446. (With synopsis of and distributional notes on the species and key to the sect. *Humifusoideum*).

G. Roti-Michelozzi: Adumbratio Florae Aethiopicae. 6. *Caesalpiniaceae* (excl. gen. *Cassia*). Webbia 13(1): 133-228 (1957). (An enumeration, with illustrations and maps).

R. L. Shaffer: *Volvariella* in North America. Mycologia 49: 545-579 (1957). (With key).

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Ö. Szatala: Prodromus einer Flechtenflora des Irans. Ann. Hist.-Nat. Mus. Nat. Hungar. 8 (ser. nov.): 101-154 (1957). (An enumeration, with keys to species and descriptions of some species; in Latin).

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T. Yamazaki: Taxonomical and phylogenetic studies of *Scrophulariaceae* — *Veronicae* with special reference to *Veronica* and *Veronicastrum* in Eastern Asia. Jo. Fac. Sci. Univ. Tokyo Sect. III. Botany 7(1-3): 91-162 (1957). (With synopses of and keys to the above-named genera).

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THE INTERPRETATION OF BINARY NOMENCLATURE FOR SUBDIVISIONS OF SPECIES

V. H. Heywood (Liverpool)

It is surprising that two of the leading French Floras are characterized by unorthodox systems of infraspecific nomenclature, and even more surprising that the interpretation of this nomenclature has never, as far as I am aware, been critically considered.

There are two major problems — 1) that of the use of unorthodox categories or their unorthodox usage, such as the *Forme* and *Race* (Rouy & Foucaud, *Flore de France*, 1893—) and 2) binomial subspecies (Rouy & Foucaud, and Fournier, *Les Quatre Flores de la France*, 1934—). Neither of these problems is exclusive to these Floras or indeed new.

Upon examination it is quickly seen that the nomenclatural consequences of the use of subspecies in binomial (or strictly speaking "bispecific") form are quite different in the two cases mentioned. Accordingly they will be considered separately.

Rouy & Foucaud recognize four infraspecific categories: sous-espèce, forme, variété and sous-variété. The forme was later replaced by the race (proles) as is explained later. The implications of these are clearly stated by Rouy & Foucaud (vol. i: XI-XIII. 1893). Different typography is employed to distinguish between them. The first two (sous-espèce and forme) are given in binomial form and the other two in the customary single epithet manner. Examples are given in continuation:

Ranunculus acer L.	[species]
subspec. I. *R. Boraeanus* Jord. (*pro specie*)	[subspecies]
tomophyllus Jord. (*pro specie*)	[varietas]
Forme *R. rectus* Bor. (*pro specie*)	["forma"]
S. -var. *pumilus* Rouy & Foucaud	[subvarietas]

Rouy & Foucaud explain their use of the category forme in the following way "Une innovation qui sera probablement remarquée, c'est la valeur que nous attribuons à la forme, que nous considerons ici comme synonyme de la *race* en horticulture, et non comme une simple variation ou modification du type spécifique dues à des changements dans les conditions ordinaires de la vie de la plante, ce que constitue alors la variété. Nous estimons donc la forme d'un degré superieur dans l'échelle de la classification à la variété, puis-qu'elle est plus stable et se reproduit généralement telle quelle". It is thus somewhat similar in implications to other terms which have been proposed intermediate between the variety and the subspecies, e.g. microsubspecies, etc.

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It should be noted that the forme in this connotation is quite definitely subordinated to the species and is not an independent binomial such as the original Jordanion species to which they very frequently refer. As the authors state in the *avant-propos* to volume ii (p. v) they were reproached by "un distingué botaniste de Genève" for their unorthodox use of the forme. This question is, however, a matter of taxonomic usage or interpretation, not nomenclature, though it may be remarked in passing that it has defeated its own ends for the simple reason that the majority of taxonomists nowadays, as in the time of Rouy & Foucaud, use the *forma* for the smallest taxonomic unit worth the dignity of a Latin epithet (many would say not at all); so that to use these taxa with the status suggested by Rouy & Foucaud they have to be raised to varietal or subspecific rank. However, the International Code lays down that the categories species, subspecies, variety, form, must be used in that order so that a forma cannot include a varietas as Rouy & Foucaud have it. Rouy later admitted that this was contrary to the ruling of the Vienna Congress (1905) and voluntarily suppressed the attribution of the word *forme* applied to that subdivision of the species intermediate between the subspecies and varietas. He then took up the term *Race* (proles) in its place and requested that readers should replace the word *Forme* by the latter in the previous volumes of the Flora (vol. x: 2-3 footnote, 1908). Unfortunately most people tend not to read prefaces or footnotes so that this elimination of the *Forme* is not generally realised.

Later in the introduction to volume xiii (1912) pp. v-vii he admits that the Vienna Congress Rules of Nomenclature make no mention of the *Race* amongst the categories of plant classification. He then gives reasons for the necessity of having such a category intermediate between the subspecies and the varietas, so as to avoid such circumventions as "varieties in the sense of races" which some authors employ. Many taxonomists would agree with Rouy on the necessity for such an additional category, the variety in fact often having to serve in lieu. But no provision is made at present in the Rules or Code for the proles other than the statement (Art. 4, para 2) that "further supplementary ranks may be intercalated or added, provided that confusion or error is not thereby introduced". The term proles (race, raza, raça, etc.) is quite frequently encountered in some European authors' works (e.g. Sampaio, *Manual de la Flora Portuguesa*, some Pflanzenreich monographs) and is often interpreted by other authors as meaning subspecies. Whether or not one is justified in so doing is open to debate and will have to be considered on another occasion. But the fact that this is so means that the term *proles* is open to confusion if generally introduced without strict definition. Clearly we cannot interpret as subspecies the proles given by Rouy as he already recognises the former category.

The second point about Rouy & Foucaud's formes or races is their expression in binary form, e.g. Forme *Ranunculus rectus* Bor. (pro specie). As stated above this also holds true for their subspecies. The custom of writing infraspecific categories in binary form has, in the past, been quite widespread. Briquet (*Prodr. Fl. Corse* 1: XXII-XXIII, 1910) comments on the position in Nyman's *Conspectus Florae Europae*. He rejects Nyman's usage as being a summary indication of what rank in the hierarchy the taxa should be accorded without adopting the corresponding nomenclature. Litardière (*Prodr. Fl. Corse* 3 (2): 63 footnote (1955)) agrees with Briquet's views.

The International Code is not very explicit on this point. Article 34 states that the use of binary nomenclature for taxa subordinate to species is not permissible. It does not clearly indicate whether they are to be regarded as illegitimate (cf. Lamberton in *Taxon* 3(1): 19. 1954) or whether they must be interpreted as trinomials with the necessary author's names added.

There are, I think two situations here which must be distinguished and interpreted differently.

a) As in the case of Rouy & Foucaud, *Flore de France* where a new combination is clearly intended by the author.

b) As in the case of Nyman, *Conspectus* (and perhaps Fournier, *Les Quatre Flores*: see below) where they are merely a summary indication of the rank which they should be given but without a consistent (or even any) attempt to adopt the corresponding nomenclature or ascertain whether in fact it already exists.

Arguments for this dual interpretation are advanced below.

Rouy & Foucaud justify binary nomenclature for subdivisions of species on the grounds of simplicity — "est tout ce qu'il y a de plus simple, de plus commode à énoncer" — so as to avoid phrases such as "*Thalictrum minus* L. subspec. *T. majus* Koch forma *T. Aurigeranum* Jeanb. et Timb (pro specie)". But to satisfy critics they say it would be sufficient to suppress the generic initial capital and write "*forma Aurigeranum*" instead of "*forma T. Aurigeranum*".

The force of this argument is largely lost when one remembers that the International Code permits the abbreviation of the above names to *Thalictrum minus* f. *Aurigeranum* (Jeanb. & Timb.) Rouy & Foucaud.

With regard to the question of authorship of the combinations Rouy & Foucaud state quite explicitly that they wished to avoid putting "nobis" on every page. They say "chaque fois qu'une plante, considerée par nous comme sous-espèce, forme ou variété, a été précédemment décrite par un botaniste à titre d'espèce, nous avons cru légitime de ne pas nous attribuer la paternité de cette distinction, et nous avons mis cette plante à la place qu'elle doit occuper, selon nous, mais avec le nom de l'auteur de l'espèce et la mention "(*pro specie* ou pro variétate)". In actual practice they have omitted the "*pro specie*" or "*pro variétate*" in a number of cases where it should have been included, but in general they are fairly consistent.

Those who wish to adhere closely to customary usage will, they say, write: forma ... N ... Nob. or var. N ... Nob., it being understood that this only applies when other authors have not before them considered the taxon concerned as a variety or presumably subspecies, "ce que nous avons soin de signaler".

Fournier, in the preface to *Les Quatre Flores* (1940, p. III) admits that "sur un point, notre nomenclature est légèrement incorrecte, pour des raisons de brièveté et de simplicité typographique; c'est quand nous donnons des variétés avec le seul nom d'un auteur qui en faisait des espèces, ou (cas très rare) inversement.

Unfortunately this "un point" is a considerable understatement. Basically the situation in the *Quatre Flores* is as follows:

Species are given in bold face, preceded by a number, thus

1618. R. acer L.

When one or more subspecies are included in the species the typical subspecies is generally given a name constructed by Fournier from the specific epithet preceded by the hyphenated prefix "eu". It, as are the other subspecies, is given the generic initial, thus

S.-E. R. eu-acer P.F. [the abbreviation "P.F." may be within brackets in some cases]

S.-E. R. Steveni Andrz.

Varieties are normally given in the customary form, e.g.

var. *Friesianus* Jord., though sometimes in binomial form, e.g.

(*R. nemorosus* DC.) a variety of *R. Breyninus* Crantz as indicated by the use of italics.

Immediately we are faced again with the interpretation of binomial subspecies. The "eu-" prefaced subspecies present no problem as they are now all illegitimate under the present Code. But clearly we cannot simply read S.-E. *R. Steveni* Andrz. as subsp. *steveni* (Andrz.) P. Fournier as Rouy & Foucaud (i: 103) have already indicated that they are responsible for that combination, and it is generally attributed to them.

But this is not all. If an analysis is made of the *Quatre Flores* it soon reveals that whatever interpretation may be arbitrarily placed on Fournier's subspecies there is no consistency within the unorthodoxy. Thus one finds the following situations:

I. When he uses combinations that already exist:
   a) He cites the combining author:
      i. with the author of the basionym in brackets, e.g.
      S.-E. *Scandix curvirostris* (Murbeck) Vierhapper.
      ii. without the author of the basionym in brackets, e.g.
      S.-E. *V. hortensis* Wettst.
      i.e. *V. tricolor* subsp. *hortensis* (DC.) Wettst.
   b) He doet not cite the combining author: this is the most frequent case, e.g. *Ranunculus Steveni* already mentioned.

II. When the combinations do not already exist formally:
   a) He puts his own name after it (e.g. *Thrincia nudicaulis* ssp. *Th. taraxacoides* (Vill.) P.F.).
   b) He does not put his name after it — this is the most frequent case and applies even though he is the author of the original species, e.g. *Galeopsis tetrahit* S.-E. *G. pseudotetrahit* P.F. He may even go to the length of citing the author of the basionym and the combining author for the subspecies *as a species*, e.g. *Physospermum aquilegifolium* S.-E. *Ph. Cornubiense* (L.) DC., thus giving the lie to any argument that might be put forward pleading lack of space as the justification for this peculiar nomenclature.

Obviously it is nearly impossible in practice to distinguish between cases of I(b) and II(b) without prior knowledge. In other words, the fact that Fournier makes no allusion (direct or indirect) to any combination that might exist does not necessarily mean that the combination does not in fact exist. From this it would follow that if no combining author is given (Ib) or (IIb) it would be wrong to interpret these cases as meaning "comb. nov.", as in some cases the combination would exist, in others not. The practice of citing the author of the basionym in parentheses and the combining author of species for subspecies mentioned in the last paragraph strengthens this view.

An example of the pitfalls likely from interpreting these cases as new combinations is the following:

(... *S.-E.* V. Juressi Link. ...)

1952. V. palustris L. [p. 446: 1936]

which is interpreted by Warburg as *V. palustris* ssp. *juressi* (K. Wein) P. Fournier (in Clapham, Tutin, Warburg, Flora Brit. Isles: 248. 1952).

Here, even though Warburg has supplied certain deficiencies in Fournier's original nomenclature (that *V. Juressi* Link was a *nomen nudum* first validated by K. Wein) he is wrong in assuming that Fournier was making a combination. This was first

done by P. Coutinho in 1921 (Coutinho himself wrongly attributed the combination to W. Becker!) as is fully explained by Franco and Pinto da Silva (in *Agron. Lusit.* 12: 633-5. 1950).

An even more recent example may be taken from the latest volume of the *Prodr. Fl. Corse* (1955) where Litardière interprets the following [Fournier p. 739]:

S.-E. **M. pyrenaica** Pourret ...

3091. **M. silvatica** (Ehrh.) Hoffm.

as ssp. *pyrenaica* P. Fournier non Pourret to be combined under *Myosotis alpestris* as ssp. *pyrenaica* (P. Fourn.) R. Lit. Here, surely, the interpretation of Fournier's possible intentions is taken to extreme lengths.

Admittedly these are rather complicated examples, but others more straightforward are likely to arise if the policy of accepting Fournier's subspecies at face value is continued indiscriminately.

Surely the point here is that it is quite unwarrantable to put the onus on the reader to find out what the exact nomenclatural situation is. The reader of a Flora rightly expects the nomenclature to have been worked out for him as well as the taxonomy (allowing, of course, for the inevitable lapses).

No further argument is needed, I feel, to show that Fournier's subspecies are quite different in their implications from those of Rouy & Foucaud and except in the few cases where combinations are explicitly made or employed they should be accepted as no more than "a summary indication of the rank in the hierarchy" which he thinks they should hold. (cf. Nyman, *Conspectus*).

It is important to remember that Rouy & Foucaud's *races* (*formes* passim), although considered validly published are subordinate taxa and it is wrong to consider them as autonomous species as has been the practice of the Index Kewensis in the past (e.g. *Genista longipes* Rouy originally published by Rouy as a subordinate *forme* of *G. pedunculata* L'Hérit.). This is emphasized as it may help to avoid the disturbance of existing nomenclature. An example can be taken from the same "*Genista longipes*". C. Vicioso (in *Bol. Inst. For. Inv. Exper. Madrid* 67: 42. 1953) replaces *Genista longipes* Pau (1904) by *G. tejedensis* (Port., Rig.) C. Vic. [sic] as it is antedated by Rouy's *forme G. longipes*. As Rouy's *forme* had no claim to specific rank nomenclaturally there was no need for Vicioso to take this action.*

Rouy & Foucaud's subspecies should be interpreted as normal trinomial subspecific combinations made by the authors. This is already standard practice.

Fournier's subspecies should be rejected nomenclaturally unless, as already stated, they are explicitly made.

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* On a point of taxonomy the Spanish plants referred to *G. tejedensis* or *G. longipes* Pau are in fact *G. lobelii* DC. which has been confused in Spain with other species, so that Pau's *G. longipes* should have been replaced by another name but for quite different reasons!

ZANTHOXYLUM L., "XANTHOXYLUM MILL.", AND THYLAX RAF.

F. R. Fosberg (Falls Church, Va.)

Seldom has failure to ascertain fully the facts in a case led to so much wasted time, effort, and printers ink as have the efforts to place *Fagara* L. and "*Xanthoxylum* Mill." on the list of Nomina Conservanda. Five articles have been published on this and the time of two international nomenclature committees has been taken up with it (see Rehder, Journ. Arnold Arb. 26: 71-73. 1945; Reeder and Cowan, mimeogr. document submitted to Stockholm Congress, 1950, and summarized in Lanjouw, Syn. Prop. 229. 1950; Rickett, Taxon 3: 139-140. 1954; Reeder, Taxon 4: 237. 1955; Shinners, Taxon 6: 135-137. 1957; plus reports and opinions to Phanerogam Committees for both Paris and Montreal Congresses). In addition, the list of Nomina Conservanda is burdened with an unnecessary name, *Fagara* L.

It does not seem necessary to restate, or even summarize, what was said in all of these articles, as they are available for examination if anyone is doubtful about the conclusions presented below. The seeming anomaly or error involved in the conservation of *Fagara* L. and the rejection of the proposal to conserve *Xanthoxylum* Mill. over *Zanthoxylum* L. led to a reexamination of the whole matter after Reeder proposed anew that *Xanthoxylum* Mill. be conserved. His stated object was to provide a name for use by those who divide this genus of the Rutaceae into a temperate eastern Asiatic and eastern North American group with a single perianth whorl and a largely tropical group with two perianth whorls. This reexamination showed that the Paris Congress had been wiser than anyone thought in rejecting the proposal to conserve *Xanthoxylum* but not quite wise enough in conserving *Fagara.*

All of the taxonomic questions involved in this matter have not been settled, especially that of the actual identity of *Xanthoxylum americanum* Mill., but the facts essential to settle the generic nomenclature seem to be, chronologically, as follows:

1. Linnaeus (Sp. Pl. 270. 1753 and Gen. pl. ed. 5. 130. 1754) set up the genus *Zanthoxylum,* including two species, *Z. clava-herculis* and *Z. trifoliatum.* He described the genus very clearly as having "Cal. Perianthium quinquepartitum: foliolis ovalibus, coloratis. Cor. nulla." This suggests that Linnaeus failed to observe the second outer very small whorl of parts which, however, he had described in Hortus Cliffortianus, or that his material of *Z. clava-herculis* should be reexamined to see if it is the species now commonly known by that name. In any event, the genus was described as having one perianth whorl, and both of the species included in it have 2 whorls.

2. Duhamel (Traité Arb. Arbust. 1: 229. *pl. 97.* 1755) described and figured the genus *Fagara,* naming no species, but describing a plant with one perianth whorl. He mentioned *Zanthoxylum* L. (as *Zantoxilum*) presumably as a synonym. Rickett, (report to Phanerogam Committee), regards this as rendering Duhamel's name not validly published. Van Steenis (report to Committee), suggests that this was merely Duhamel's way of indicating a transfer of the species he was describing from *Zanthoxylum* L. to *Fagara* Duh. This is certainly a forced interpretation, with nothing to back it up, but in any event, the citation of the earlier name as a synonym only renders *Fagara* Duh. illegitimate, not invalidly published, and does not at all remove it from consideration.

3. Linnaeus (Syst. Nat. ed. 10. 2: 897. 1759) recognized the genus *Fagara* for plants having two perianth whorls and bisexual polygamous flowers. This name is illegitimate as a later homonym but has been conserved.

4. Miller (Gard. Dict. ed. 8, unpaged, 1768) adopted *Zanthoxylum* L., altered its spelling to *Xanthoxylum*, amplified the description somewhat, and described *X. americanum* in addition to *X. clava-herculis* L. In no sense did Miller here describe a new genus. He not only adopted Linnaeus' genus, but described the essential feature, the single perianth whorl exactly as had Linnaeus, although he interpreted it correctly as petals rather than calyx as Linnaeus did. Contrary to what is implied in the proposals under discussion, Miller took this feature from his description of *X. clava-herculis* L., of which he described the flowers, not from *X. americanum* of which he says nothing about the detail of the flowers. Therefore, regardless of 200 years of errors, it is not possible to assume that Miller even accidentally described a new genus. He merely perpetuated Linnaeus' error, if error it was. Furthermore, according to Miller's description, his *X. americanum* could not be what is now called that as he says of it "the flowers grow in loose panicles as in the first sort" rather than in axillary fascicles which is the case with the modern *Z. americanum* Mill. Lawrence, when photographing Miller's types in the British Museum in 1950 was unable to locate a specimen of *Xanthoxylum americanum* so we have no way of knowing what plant this name actually refers to.

5. Rafinesque (Med. Bot. 2: 114. 1830) described the genus *Thylax* for Willdenow's *Zanthoxylum fraxineum* which has been generally regarded as a synonym of *X. americanum* Mill. but seems actually to be the earliest available name for this species as generally understood.

6. Engler (Nat. Pflanzenf. III, 4: 115. 1896) recognized two separate genera for which he used the names *Xanthoxylum* L. for that with a single perianth whorl and *Fagara* L. for that with two whorls.

7. Rehder (Journ. Arnold Arb. 26: 71-73. 1945) recognized one genus *Zanthoxylum* L. with two subgenera, *Fagara* (L.) Schneid. and *Thylax* (Raf.) Rehd. and gave most of the information necessary for an understanding of the case.

8. Reeder and Cowan (1950) proposed conservation of "*Xanthoxylum* Miller" and *Fagara* L.

The proposal for conservation of *Xanthoxylum* Mill. was rejected by the Paris Congress, leaving *Zanthoxylum* L. still available either for the combined genera or for the genus with 2 perianth whorls. Curiously, they conserved *Fagara* L. based on *F. pterota* L. which by common consent is the same as *Zanthoxylum* L. and since it is based on a different type, goes into synonymy under *Zanthoxylum* L. in spite of its presence in the list of nomina conservanda.

One interpretation of Note 3 under Article 14 of the Paris Code would regard *Zanthoxylum* L. as automatically added to the list of names rejected in favor of *Fagara* L., even though it was not formally included in the Nomina Rejicienda. This interpretation seems untenable because of the last sentence of the same note. Since this is an example of a situation which may frequently arise and which seems often misunderstood, the following detailed explanation may not be out of place.

As I see it we have one taxon, *Zanthoxylum*, proposed by Linnaeus, in 1753-54, with *Z. clava-herculis* as type. Then, in 1759 he described another taxon, *Fagara*, based on *F. pterota*. Nomenclaturally these are two separate and distinct entities (taxa), even though in the opinion of most, if not all botanists, they are to be united, taxonomically. *Fagara* L., the name of one of these, was conserved against its earlier homonym, *Fagara* Duh. This stands unless I, or anyone else, choose to unite *Fagara*

L. with *Zanthoxylum* L., another taxon with a legitimate name, when "the earlier of the two competing names is adopted in accordance with Art. 57". To me this is clearly what the last half of Art. 14 note 3 means. It could not conceivably mean that anyone could consider any competing name as automatically added to the rejected list just because he regarded it as coming within the circumscription of the taxon to which the conserved name applied. This would really be nomenclature by personal opinion rather than by rules. I am proposing in another place, an altered wording of Art. 14, note 3, to avoid future confusions in this sort of case.

As the matter stands at present we have for the combined genus the correct name *Zanthoxylum* L. (1753), for the segregate genus with two perianth whorls the same correct name, *Zanthoxylum* L. and for the segregate genus with one whorl the correct name *Thylax* Raf.

If this situation is let stand, those who maintain one genus will have very little change to effect, except some transfers from *Fagara* to *Zanthoxylum*. Those who maintain two genera will have the same transfers to make, plus transferring all of the 15 or so species with one perianth whorl (except *Z. fraxineum*) to *Thylax*.

My suggestion is to reject Reeder's proposal and to apply the code strictly. We really have not much choice since there actually seems to be no "*Xanthoxylum* Miller" to conserve.

TYPIFICATION OF THE NAME HYDNUM (FUNGI)

M. A. Donk (The Hague)

Recently Pouzar (1958) has argued that *Hydnum repandum* L. ex Fr. is not acceptable as the type species of *Hydnum* L. ex Fr. He states that *H. repandum* "is ... handicapped by Fries' [*1821:* 397] mentioning it in a paragraph entitled 'Aberratt,' where he noted: 'In *H. repando* aliisque paucissimis aculei in tubulos incompletos abire visi.' " It appears as if Pouzar misunderstands the Latin quotation which runs about as follows in translation: 'Abberations. The spines in *H. repandum* and a very few other (species) have been seen to pass into incomplete tubes.'

Thus, Fries does not call *H. repandum* an aberrant species, but merely states that in *H. repandum* aberrations may occur, which is a completely different story! Consequently, *H. repandum* is not 'an element that the original author considered atypical' as Pouzar wants us to believe: it still appears perfectly eligible and I have nothing to add to or alter in my previous account on the typification of the name *Hydnum* (Donk 1957: 97).

Pouzar also states that Gray's emendation of *Hydnum* is "a justifiable emendation of Fries' conception." This is emphatically not the case. First, Gray had no knowledge of Fries's "Systema": this is an emendation of the pre-Friesian genus *Hydnum* L., with the exclusion of the only species (*H. repandum*) with which Linnaeus started his genus. Secondly, Gray attributed the name to Dillenius, that is, he referred to *Hydna* L. = *Hydnum* L., which in its turn was introduced as a new name for *Erinaceus* Dillenius. The only original species of Dillenius's and Linnaeus's taxon was *Erinaceus coloris pallide lutei* Dill. = *Hydnum repandum* L. In my opinion Gray misapplied the name "*Hydnum.* Dillenius" when he excluded that species.

Another question, not quite independent from the first one discussed is, who is the factual author of the name *Hydnum*, Linnaeus or Fries, or, rather, whom did Fries (in the starting-point book) consider to be the author of the name? There is no possible doubt in this respect: Fries headed his treatment of the genus by

"*Hydnum.* Linn.," and added in synonymy, "*Hydnum.* Linn. gen. 1076." He certainly had no intention of introducing a new taxon when he adopted the name. The reference to Linnaeus is sufficient technically to establish the valid (re)publication of the name *Hydnum* by Fries as that of a new taxon in agreement with the Code. Fries's generic description and remarks may (or, in my opinion, should) be considered as purely supplementary (Donk *1957a*). Let us take care not to ascribe to Fries the act of factually having published a new taxon *Hydnum* Fr., non *Hydnum* L., when he simply has not done so—neither does the Code compel us to assume this.

LITERATURE CITED

Donk, M. A. (1957) in Taxon **5**; (1957a) *in* Taxon **6**: 245-256. — Fries, E. M. (1821), Syst. mycol. **1**. — Pouzar, Z. (1958) *in* Taxon **7**: 79-80.

THE CITATION OF THE "BRYOLOGIA EUROPAEA"

W. D. Margadant and R. van der Wijk (Groningen)

In The Bryologist 47: 97 (1944) Barnhart gives the dates of the "Bryologia europaea". The information given there is very important. However, the definite work is bound in six volumes with the genera in taxonomical order, that is not in the order of the appearance of the different fascicles. The pages of each monograph are numbered separately. So it remains difficult to cite a genus or a species clearly. The authors themselves numbered the *plates* continuously from 1-641 in the order for binding. For an easy use of the text it is necessary to renumber the *pages* of each volume continuously. We were fortunate to find in the library of the University of Amsterdam a copy of the whole work in which the different fascicles (plates and text) were bound as indicated by the authors in the conspectus of each volume. Accordingly, we could number the pages continuously. The result is given here. Sometimes the numbering of a plate is inconsistent with that of the pages, e.g. when a supplement is bound after the genus concerned and its plate was placed by the authors between the plates of the genus which appeared earlier.

We give two lists. The first one contains the genera in the order as bound in each volume. For each genus are given the pages of the continuously numbered volume (pages omitted are without text) followed by the plates, also continuously numbered. Moreover, the fascicle is given with the year of its publication (according to Barnhart), and the number of the pages and of the plates in the monograph.

The second list gives the genera in alphabetical order, indicating the volume and the page of each volume on which the account of the genus begins, e.g. *Bartramia* 4: 31.

In the Index Muscorum we will cite not only the volume and the pages but also the fascicles and the pages of the monograph as given in Paris, Index Bryologicus. A citation will appear in this way: *Physcomitrella patens* B.S.G. Bryol. eur. 1: 14, *3.* 1849. fasc. 42, Mon.: 2, *2.*

There will be only one exception. The fascicle 1, containing the genera *Phascum, Voitia, Archidium* and *Bruchia* was issued in 1836, but afterwards it was cancelled and replaced in the definitive work by fascicle 43, bound in vol. 1. as the pages 21-49. When it is necessary to give a reference to the original text, the pages of the monograph of each genus in fascicle 1, 1836, have to be cited.

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	Volume 1					
1	Memoriae Dill. Hedw. Brid.					
3—4	Praefatio					
5—6	Conspectus vol. 1					
7—12	Ephemerum	1,2	42	1849	1—6	1, 2
13—14	Physcomitrella	3	42	1849	1—2	2 (Acaulon)
15—19	Acaulon	3, 4	42	1849	1—5	1, 2
21—27	Phascum	5, 6	43	1850	1—7	1, 2
29—32	Voitia	7	43	1850	1—4	1
33—35	Archidium	8	43	1850	1—3	1
37—40	Pleuridium	9, 10	43	1850	1—4	1, 2
41—44	Bruchia	11	43	1850	1—4	1
45—49	Astomum	12, 13, 14	43	1850	1—5	1—3
51—57	Hymenostomum	16—19	33—36	1846	1—7	1—4
59	Hymenostomum suppl.	15	42	1849	1	1
61—71	Weisia	20—28	33—36	1846	1—11	1—8 (4 double)
73—82	Gymnostomum	29—36	33—36	1846	1—10	1—8
83—89	Anoectangium	37—39	29—30	1846	1—7	1—3
91—93	Eucladium	40	33—36	1846	1—3	1
95—100	Rhabdoweisia	41—43	33—36	1846	1—6	1—3
101—103	Cynodontium	44	33—36	1846	1—3	1
105—148	Dicranum	45—72, 74—85	37—40	1847	1—44	1—37 (1, 3, 4 double)
149—150	Dicranum suppl.	73	43	1850	1—2	1
151—156	Arctoa	86—87	33—36	1846	1—6	1—2
157—159	Dicranodontium	88	41	1847	1—3	1
161—167	Campylopus	89—93	41	1847	1—7	1—5
169—172	Angstroemia	94	33—36	1846	1—4	1
173—178	Trematodon	95—96	29—30	1846	1—6	1—2
179—183	Leucobryum (Oncophorus)	97—98	41	1847	1—5	1—2
185—196	Fissidens	99, 101, 103—106	17	1843	1—12	1—6
197—198	Fissidens suppl. 1	100	42	1849	1—2	1
199—200	Fissidens suppl. 2.	102, 107	46—47	1851	1—2	2—3
201—205	Conomitrium (Octodiceras)	108	17	1843	1—5	1
	Volume 2					
1—2	Conspectus vol. 2					
3—5	Anodus	109	33—36	1846	1—3	1
7—12	Seligeria	110—112	33—36	1846	1—6	1—3
13—15	Stylostegium	113	33—36	1846	1—3	1
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29—41	Pottia	117—122, 124	18—20	1843	1—13	1—7
43	Pottia suppl.	123	42	1849	1	1
45—50	Anacalypta	125—128	18—20	1843	1—6	1—4
51—60	Desmatodon	129—130, 132—136	18—20	1843	1—10	1—7
61	Desmatodon suppl.	131	31	1846	1	1
63—108	Barbula	137—145, 147—151, 153—166, 168—169	13—15	1842	1—46	1—29 (2 double)
109—110	Barbula suppl. 1	152	31	1846	1—2	1
111	Barbula suppl. 2	146	43	1850	1	2
113	Barbula suppl. 3	167	46—47	1851	1	3
115—133	Trichostomum	170—184	18—20	1843	1—19	1—15
135—141	Didymodon	185—188	29—30	1846	1—7	1—4
143—149	Ceratodon	189, 190, 192	29—30	1846	1—7	1—3
151	Ceratodon suppl.	191	43	1850	1	1
153—157	Distichium	193—194	29—30	1846	1—5	1—2
159—161	Eustichium	195	42	1849	1—3	1
		Volume 3				
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17—32	Encalypta	198—205	4	1838	1—16	1—8
33—41	Zygodon	206—207	4	1838	1—9	1—2
43—73	Orthotrichum	208—212, 215—223, 225—228	2—3	1837	1—32	1—13
75—76	Orthotrichum suppl. 1	213, 214	42	1849	1—2	1—2
77	Orthotrichum suppl. 2	224	43	1850	1	3
79—83	Ptychomitrium	229	2—3	1837	1—5	1
85—87	Glyphomitrium	230	2—3	1837	1—3	1 (Coscinodon)
89—92	Coscinodon	230	2—3	1837	1—4	1
93—102	Schistidium	231—235	25—28	1845	1—10	1—5
103—132	Grimmia	236—252, 254—261	25—28	1845	1—30	1—24 (10 double)
133	Grimmia suppl. 1	253	42	1849	1	1
135—147	Racomitrium	262—271	25—28	1845	1—13	1—2 (Dryptodon) 1—8
149—154	Hedwigia	272—273	29—30	1846	1—6	1—2
155—158	Hedwigidium	274	29—30	1846	1—4	1
159—162	Braunia	275	29—30	1846	1—4	1
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199—209	Tayloria	284—287	23—24	1844	1—11	1—4	
211—218	Tetraplodon	288—290	23—24	1844	1—8	1—3	(Splachnum)
219—231	Splachnum	291—296	23—24	1844	1—13	4—9	
233—236	Discelium	297	29—30	1846	1—4	1	
237—251	Physcomitrium	298—301	11	1841	1—15	1—4	
253—257	Entosthodon	302	11	1841	1—5	1	
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		Volume 4					
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9—16	Meesia	308—311	10	1841	1—8	1—4	
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21—25	Catoscopium	313	12	1842	1—5	1	
27—30	Oreas	314	12	1842	1—4	1	
31—51	Bartramia	316—326	12	1842	1—21	1—11	
53—54	Bartramia suppl.	315	31	1846	1—2	1	
55—57	Bartramidula	327	29—30	1846	1—3	1	
59—65	Mielichhoferia	328—329	23—24	1844	1—7	1—2	
67—70	Orthodontium	330	23—24	1844	1—4	1	
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153—164	Bryum suppl. 1	333, 335—338, 349, 350, 357, 361, 362, 377, 381, 383	32	1846	1—12	1—13	
165—201	Mnium	385, 387 389—391, 393, 395—399, 401—402	5	1838	1—37	1—13	
203—208	Mnium suppl. 1	386, 388, 392, 394, 400	31	1846	1—6	1—5	
209—220	Aulacomnion(um)	403—406	10	1841	1—12	1—4	
221—228	Timmia	407—408	10	1841	1—8	1—2	
229—238	Atrichum	409—412	21—22	1844	1—10	1—4	
239—244	Oligotrichum	413—414	21—22	1844	1—6	5—6	
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NOTES ON ALGAL NOMENCLATURE IV

VARIOUS GENERA AND SPECIES OF CHLOROPHYCEAE, PHAEOPHYCEAE AND RHODOPHYCEAE*

George F. Papenfuss, (Berkeley, California)

Work on the South African marine algae and the Index Nominum Genericorum continually brings to light taxa whose nomenclature is in need of revision. The present article deals with a number of such cases.

Cladophoropsis Boergesen. When I (Papenfuss, 1950) proposed *Cladophoropsis* Boergesen (1905, p. 288) for conservation against *Spongocladia* J. E. Areschoug (1853, p. 202), I refrained from transferring the species of *Spongocladia* to *Cladophoropsis,* pending the acceptance of this proposal by the Committee for Algae. In view of the acceptance of the proposal (cf. Lanjouw, 1956, p. 202), it is necessary now to make three transfers as follows:

Cladophoropsis vaucheriaeformis (J. E. Areschoug) Papenfuss, comb. nov. *Spongocladia vaucheriaeformis* J. E. Areschoug, 1853, p. 202, pl. 2.

Cladophoropsis dichotoma (Zanardini) Papenfuss, comb. nov. *Spongodendron dichotomum* Zanardini, 1878, p. 38; *Spongocladia dichotoma* (Zanardini) Murray et Boodle, 1888, p. 175.

Cladophoropsis neocaledonica (Grunow ex Murray et Boodle) Papenfuss, comb. nov. *Spongocladia neocaledonica* Grunow ex Murray et Boodle, 1888, p. 175.

Chlorosiphon Kuetzing, 1843, p. 301; 1849, p. 484; 1856, p. 18, pl. 50, fig. I. This genus, with the type *C. shuttleworthianus,* was erected by Kuetzing upon material sent to him by Shuttleworth, who collected it on the west coast of Eire. Harvey (1849, p. 32; 1851, text to pls. 270, 285), who examined the type material, remarked that the plants appeared to be young stages of *Scytosiphon lomentaria.* Kjellman (1893, p. 201) placed *Chlorosiphon* in the synonymy of *Litosiphon* Harvey (1849, p. 43) in which he was followed by De Toni (1895, p. 480), who listed *C. shuttleworthianus* as a *species inquirenda.* If Kjellman's interpretation of the genus were correct, the name *Chlorosiphon* would have to supplant *Litosiphon.*

Examination of Kuetzing's type of *Chlorosiphon shuttleworthianus* (which was kindly loaned me by the Director of the Rijksherbarium, Leiden) has shown that Harvey was correct — the material does consist of juvenile plants of *Scytosiphon lomentaria* (Lyngbye) Endlicher.

Crassilingua Papenfuss. This name was proposed by Papenfuss (1956, p. 160) as a substitute for *Pachyglossum* J. Agardh (non Decaisne). Nomenclaturally, the oldest species in the genus is *P. marginiferum* (J. Agardh) J. Agardh, which should be known as **Crassilingua marginifera** (J. Agardh) Papenfuss, comb. nov. *Delesseria marginifera* J. Agardh, 1885, p. 70.

Dasyptilon G. Feldmann, 1950, p. 308, figs. 10-12. *Falklandiella* Kylin, 1956, p. 391. Geneviève Feldmann in 1950 erected the genus *Dasyptilon* on the basis of the plant which Laing (1905) had described under the name *Euptilota pellucida.* Laing considered his material representative of the species which Harvey (in J. D. Hooker, 1855) had described from New Zealand under the name *Ptilota pellucida.* De Toni (1924) had transferred this species to the genus *Plumariopsis* De Toni (1903).

Feldmann was not certain that the material studied by her (Lindauer, Algae novaezelandiae exsicc. no. 248!) actually was representative of *Ptilota pellucida* Harvey, and hence called the species *Dasyptilon pellucidum* (Laing) G. Feldmann. On the basis of material that I collected in New Zealand, Erskine (1955) studied the development of the cystocarp in this species. He also examined the type of *P. pellucida* Harvey and established that the New Zealand plant studied by him and Feldmann was indeed representative of Harvey's species, permitting ascription of the combination *D. pellucidum* to (Harvey) G. Feldmann rather than (Laing) G. Feldmann.

* This study was aided by a Grant-in-aid from the National Science Foundation (1954- . . . .) for which grateful acknowledgment is made. I also wish to thank Mr. Kung-Chu Fan for valuable assistance.

Both Harvey (in J. D. Hooker, 1855) and J. Agardh (1876, p. 75) in their time already remarked that *Ptilota pellucida* is closely related to the plant from Cape Horn and the Falkland Islands that J. D. Hooker (in Hooker and Harvey, 1845, p. 271) had described under the name *Ptilota harveyi*. Kylin (1956) erected the genus *Falklandiella* on the basis of *P. harveyi* and also referred *P. pellucida*, the type of *Dasyptilon*, to his new genus. *Dasyptilon*, which was described by G. Feldmann after Kylin's death, has the right of priority. In addition to the type species, this genus thus includes **Dasyptilon harveyi** (J. D. Hooker) Papenfuss, comb. nov. *Ptilota harveyi* J. D. Hooker, in Hooker and Harvey, 1845, p. 271.

Helminthiopsis J. Agardh, 1899, p. 97. *Acrosymphyton* Sjoestedt, 1926, p. 8. Kylin in 1932 (p. 6) and again in 1956 (p. 151) pointed out that the type material of *Helminthiopsis verticillifera* J. Agardh (1899, p. 98), which is the type species of *Helminthiopsis* J. Agardh, corresponds exactly to that of *Calosiphonia caribaea* J. Agardh (1899, p. 84). The latter species was transferred to *Acrosymphyton* by Sjoestedt (1926, p. 9) when he established this genus on the basis of the plant from the Mediterranean long known as *Dudresnaya purpurifera* J. Agardh (1842, p. 85). As the female reproductive systems of *Dudresnaya* and *Acrosymphyton* are strikingly different and as these two genera were well known to Kylin, who published upon their morphology in 1928 and 1930, respectively, there is little reason for questioning Kylin's observations as regards the identity of *H. verticillifera* and *A. caribaeum*.

It seems clear, therefore, that *Helminthiopsis* J. Agardh (1899) is the correct name for the genus now known as *Acrosymphyton* Sjoestedt (1926). Kylin (1956, p. 151) retains *Acrosymphyton* and remarks: "Als Gattungsname behalte ich hier den jüngeren Namen *Acrosymphyton* da die Eigentümlichkeiten dieser Gattung in völlig richtiger Weise von Sjöstedt hervorgehoben worden sind, während *Helminthiopsis* von J. Agardh in so unvollständiger Weise beschreiben wurde, daß es nicht möglich ist, sie ohne Originalexemplare zu identifizieren . . ." This is not a valid reason, however, for suppressing *Helminthiopsis*. In addition to the type species, *H. verticillifera*, the genus includes **Helminthiopsis purpurifera** (J. Agardh) Papenfuss, comb. nov. *Dudresnaya purpurifera* J. Agardh, 1842, p. 85.

Taylor (1952) has made a detailed study of *Helminthiopsis verticillifera* (under the name *Acrosymphyton caribaeum*) and has compared it with *H. purpurifera*, whose morphology is well known from the work of earlier investigators (listed in Taylor's bibliography).

Husseyella Papenfuss, nom. nov. *Husseya* J. Agardh, 1901, p. 123 (non *Husseia* Berkeley, 1847, p. 508).

Type species: **Husseyella australis** (J. Agardh) Papenfuss, comb. nov. *Husseya australis* J. Agardh, 1901, p. 127.

The name *Husseya* which J. Agardh gave to a monotypic Australian genus of Rhodomelaceae is a later homonym of *Husseia* Berkeley, a genus of fungi. Both were named after Mrs. Hussey.

Hypnea Lamouroux, 1813, p. 131. Schmitz (1889, p. 443) lectotypified *Hypnea* with *H. hamulosa* "(Turner) Lamouroux". This was an unfortunate choice and it is recommended that *H. musciformis* (Wulfen) Lamouroux, which Kylin (1932, p. 47) proposed as lectotype (without apparently being aware of Schmitz' proposal), be substituted for *H. hamulosa*. The name *H. hamulosa* is linked with a great deal of confusion as is detailed below.

In the first place, the binomial *Hypnea hamulosa* Lamouroux should be treated as a *nomen nudum*, as apparently it has been considered by many authors (cf. De Toni, 1900, p. 477; Tanaka, 1941, p. 245). Lamouroux (1813, p. 132) entered the name in his list of species of *Hypnea* as: "*Hypnea humulosa — Fucus hamulosus*? Id. [Turner] — Ind. Orient.", which indicates that he probably had a plant from the East Indies (of which he gave neither a description nor an illustration) that he suspected of possibly being representative of the species that Turner (1809, pl. 79) had illustrated under the name *Fucus hamulosus*. It is to be noted, however, that Turner did not describe his plant as new but gave the author as Esper, who in 1800 (p. 169, pl. 89) described and illustrated a plant from the Malabar coast (source according to Turner, 1809, p. 20) under this name. To my knowledge, the type of *F. hamulosus* Esper has never been reexamined. Since the time of J. Agardh (1852, p. 444) Esper's binomial has usually been included in the synonymy of *H. nigrescens* Greville ex J. Agardh (1852, p. 443).

The plant which Turner (1809, pl. 79) had in hand when he illustrated *Fucus hamulosus* was obtained by Viscount Valentia in the Red Sea and has passed since the time of Montagne (1849, p. 244) as *Hypnea hamulosa* "(Turner) Montagne" * (cf. J. Agardh, 1852, p. 447; De Toni, 1900, p. 477; Nasr, 1947, p. 114).

The binomial *Hypnea hamulosa* clearly is based on *Fucus hamulosus* Esper, and this name will have to be resurrected for the plant from the Malabar coast (and possibly elsewhere in the Orient).

What the correct name is, if one exists, for the species from the Red Sea that passes as *Hypnea hamulosa* "(Turner) Montagne" is uncertain.** Schmitz presumably had this species in mind when he lectotypified *Hypnea*, but in view of the confusion associated with the nomenclature and taxonomy of this plant and the fact that the epithet *musciformis* must have suggested the generic name *Hypnea* to Lamouroux, it seems logical to adopt Kylin's selection of *H. musciformis* (Wulfen) Lamouroux as lectotype of this genus. Furthermore, *H. musciformis* is the only species of *Hypnea* of which the details of structure and reproduction are well known (cf. Kylin, 1930).

Iridaea Bory. Papenfuss (1947, p. 12) proposed *Iridaea* Bory (1826, pp. 15, 16) for conservation against *Iridae* Stackhouse (1816, pp. ix, xii). Pending the acceptance of this proposal (cf. Lanjouw, 1956, p. 207) none of the transfers from *Iridophycus* Setchell et Gardner (1936) was made. The following new combinations are in order.

Iridaea fulgens (Setchell et Gardner) Papenfuss, comb. nov. *Iridophycus fulgens* Setchell et Gardner, 1937, p. 173.

Iridaea furcata (Setchell et Gardner) Papenfuss, comb. nov. *Iridophycus furcatum* Setchell et Gardner, 1937, p. 171.

Iridaea oregona (Doty) Papenfuss, comb. nov. *Iridophycus oregonum* Doty, 1947, p. 182, pl. 11, fig. C.

Iridaea parksii (Setchell et Gardner) Papenfuss, comb. nov. *Iridophycus parksii* Setchell et Gardner, 1937, p. 172.

Iridaea parvula (Kjellman) Papenfuss, comb. nov. *Iridaea laminarioides* forma *parvula* Kjellman, 1889, p. 31. *Iridophycus parvulum* (Kjellman) Setchell et Gardner, 1937, p. 170; Doty, 1947, p. 183.

Iridaea reediae (Setchell et Gardner) Papenfuss, comb. nov. *Iridophycus reediae* Setchell et Gardner, 1937, p. 172.

Iridaea sinicola (Setchell et Gardner) Papenfuss, comb. nov. *Iridophycus sinicola* Setchell et Gardner, 1937, p. 172.

Iridaea splendens (Setchell et Gardner) Papenfuss, comb. nov. *Iridophycus splendens* Setchell et Gardner, 1937, p. 170; Smith, 1944, p. 289, pl. 72, fig. 1.

Myriophylla Holmes, 1894, p. 340. *Myrioglossa* Holmes, 1894, p. 342; 1896, p. 89. Holmes (1894) erected the genus *Myriophylla* for a new species from South Africa, *M. beckeriana* Holmes. Later (1894, p. 242; 1896, p. 89), he proposed the substitute name *Myrioglossa* because he thought *Myriophylla* was invalidated by *Myriophyllum* Linnaeus (1753), which, however, in accordance with Article 75 of the Paris Code, is not the case.

Examination of *Myriophylla beckeriana* has shown that it is representative of *Botryocladia* (J. Agardh) Kylin (1931). The only apparent differences between *M. beckeriana* and species of *Botryocladia* lie in the more fleshy nature of the axes and the distichous arrangement of the vesicles in *Myriophylla*. Anatomically, there are no fundamental differences between the two genera; and in some species of *Botryocladia* there is a tendency for the vesicles to be distichous. G. Feldmann (1944, p. 53) has already suspected that *Myriophylla* and *Botryocladia* will have to be merged. In fact, Schmitz in 1896 pointed out that *M. beckeriana* was closely related to J. Agardh's (1851, p. 241) section *Botryocladia* of *Chrysymenia* and transferred the species to *Chrysymenia*. Weber-van Bosse (1928, p. 468) drew attention to the correspondence of the distichous arrangement of the vesicles in some branches of *C. leptopoda* (now *B. leptopoda*) and the condition in *M. beckeriana*.

On the basis of present knowledge it is evident, then, that *Myriophylla* Holmes (1894)

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* The combination *Hypnea hamulosa* was first made by Greville (1830, p. lix).

** Kuetzing (1849, p. 758), Hauck (1887, p. 20) and Boergesen (1943, p. 59) consider *Hypnea humulosa* "(Turner) Montagne" as the same as *H. valentiae* (Turner) Montagne.

and *Botryocladia* (J. Agardh) Kylin (1931) are representative of the same genus. In consideration of the fact that *Myriophylla* has received only one species, which so far is known only from South Africa, and that *Botryocladia* includes 12 species and is widely distributed in the Atlantic, Pacific and Indian Oceans and the Mediterranean Sea (cf. G. Feldmann, 1944), it seems logical to propose *Botryocladia* for conservation against *Myriophylla*.

(37) Nomen genericum conservandum propositum: *Botryocladia* (J. Agardh) Kylin, Lunds Univ. Årsskr. ser. 2. Avd. 2. 27(11): 17. 1931. Species typica: *B. uvaria* (C. Agardh) Kylin [= *B. botryoides* (Wulfen) J. Feldmann]. Nomen rejiciendum propositum: *Myriophylla* Holmes, Ann. Bot. 8: 340. 1894. Species typica: *M. beckeriana* Holmes.

In anticipation of the acceptance of the above proposal, the following transfer is necessary: **Botryocladia beckeriana** (Holmes) Papenfuss, comb. nov. *Myriophylla beckeriana* Holmes, 1894, p. 341, pl. 18, figs. 1-7.

Tuomeya Harvey, 1858, p. 64. *Baileya* Kuetzing, 1857, p. 35, pl. 87, fig. III (non Harvey et Gray in Gray, 1849, p. 105). On the basis of material collected in Virginia by Bailey, Kuetzing in 1857 described the genus *Baileya* with the single species *B. americana*. Upon material collected by Tuomey in Alabama and by Bailey in Virginia, Harvey (1858) described the same genus and species the following year under the binomial *Tuomeya fluviatilis*, by which name it is still known. The generic name *Baileya* Kuetzing (1857) is invalidated by *Baileya* Harvey et Gray (1849) but Kuetzing's specific name *americana* has priority over *fluviatilis*. In a footnote appended to Setchell's (1890) paper on *Tuomeya*, Farlow discussed the question whether Kuetzing's specific name has priority over that of Harvey, and he chose to retain Harvey's name, as he was of the opinion that Kuetzing's work may not have become available to the botanical public long before that of Harvey, which was issued in March of 1858. The arguments of Farlow are weak, however, and not adequate for the continued suppression of Kuetzing's specific name, which must be restored. This plant should, therefore, be known as **Tuomeya americana** (Kuetzing) Papenfuss, comb. nov. *Baileya americana* Kuetzing, 1857, p. 35, pl. 87, fig. III.

Pityophykos Papenfuss, nom. nov. *Pithyopsis* Falkenberg in Schmitz et Falkenberg, 1897, p. 441 (non *Pityopsis* Nuttall, 1841, p. 317).

Type species: **Pityophykos tasmanica** (Sonder) Papenfuss, comb. nov. *Acanthophora tasmanica* Sonder, 1852, p. 699.

The name *Pithyopsis* which Falkenberg gave to a monotypic Tasmanian genus of Rhodomelaceae is a later homonym of *Pityopsis* Nuttall, a genus of flowering plants.

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ZEPHYRANTHES TUBISPATHA, Z. PUERTORICENSIS, Z. INSULARUM, Z. NERVOSA, Z. COMMERSONIANA, AND HABRANTHUS ROBUSTUS

Hamilton P. Traub (La Jolla, California)

Confusion in nomenclature finally involving a number of species as indicated in the title had its origin a long time ago (see Hume, 1940; Sealy, 1954). The problem required investigation in connection with the preparation of the writer's manuscript of the monograph on the *Amaryllidaceae*.

The mix-up started with the misapplication of the name, *Amaryllis tubispatha* L'Hérit. (Sert. Angl. 9. 1788), of a red-flowered species from Argentina, to a different white-flowered plant from Jamaica by Ker-Gawler (Bot. Mag. Lond. pl. 1568. 1813). Although Herbert knew that Ker-Gawler had made this mistake, he deliberately perpetuated this error (Herbert, 1821; 1837), and unfortunately the error has persisted to the present day (Sealy, 1954). The L'Héritier description was also interpreted by Herbert (1837, p. 167; 172) as possibly clouding the priority of the name, *Habranthus robustus* Herb. ex Sweet, from Argentina.

Through the kind cooperation of Prof. H. Humbert, Director, and M. J. Leandri, subdirector, Laboratoire de Phanerogamie (P), Museum National d'Histoire Naturelle, Paris, the four herbarium sheets needed were sent to the writer for study. These included No. 3115 (= *Zephyranthes nervosa* (H.B.K.) Herb.); No. 3116 and No. 3118 (= *Zephyranthes tubispatha* (L'Hérit.) Herb. ex Traub); and No. 3117 (= *Zephyranthes commer-*

soniana Herb.). With the kind permission of Prof. Humbert, samples of the delicate floral parts were revived in hot water, straightened out, and permanently mounted between plastic film, and affixed to the herbarium sheets by the writer according to the procedure previously described (Traub, 1950; 1951a). Contrary to previous reports, the specimens are generally in excellent condition, and Commerson is to be congratulated even at this late date on a good job in the preparation of these specimens almost two hundred years ago.

The critical study of the herbarium material; living plants of four of the species in the test garden together with the chromosome data of Dr. Flory (1941; 1957) and his colleagues, and the pertinent literature, has cleared up the initial confusion, and has paved the way for clearing up any remaining problems.

I. *Zephyranthes tubispatha* (L'Hérit.) Herb. ex Traub (from Argentina and Uruguay).

It has been indicated that Ker-Gawler (1813) misapplied the name, *Amaryllis tubispatha* L'Hérit. Although he knew of this misapplication, Herbert deliberately transferred the mistake over into *Zephyranthes*. The Code provisions concerning such transfers (see Art. 55-2f) are retroactive. Such a deliberate disregard of the Code is thus not tolerated.

According to Art. 55-2f, when on transference to another genus, the specific epithet has been applied erroneously in its new position to a different plant, the new combination must be retained for the plant on which the epithet was originally based and must be attributed to the author who first published it. The specific epithet of *Amaryllis tubispatha* L'Hérit., was transferred to *Zephyranthes* by Herbert, who, however, erroneously applied the new combination, *Zephyranthes tubispatha,* to another species of *Zephyranthes,* namely to the plant figured in Bot. Mag. Lond. pl. 1568. 1813, to which Ker-Gawler had erroneously misapplied the name, *Amaryllis tubispatha* L'Hérit., as is evident by Herbert's deliberate admission and description (Herbert, 1837, pp. 171-172; 166-167). Therefore, the combination *Zephyranthes tubispatha* (L'Hérit.) Herb., must be retained for *Amaryllis tubispatha* L'Hérit., when the species is placed in *Zephyranthes*; the citation in parentheses (under Art. 49) of the name of the original author, L'Héritier, indicates the type of the epithet. The proper transfer is hereby made.

Zephyranthes tubispatha (L'Hérit.) Herb. ex Traub, comb. nov. Syn. — *Amaryllis tubispatha* L'Hérit., Sert. Angl. 9. 1788; type: No. 3116 (P), Buenos Aires, Argentina, *Commerson*; Ker-Gawl. (species *name* applied erroneously to different plant), Bot. Mag. Lond. pl. 1568 (the *name* only, not the description). 1813 (fide Art. 55-2f, Int. Code); *Zephyranthes tubispatha* (L'Hérit.) Herb. (specific *epithet* only, not the description). 1821. (fide Art. 55-2f, Int. Code).

Type material: There are two scapes in flower, without leaves, on sheet No. 3116 (P), from Buenos Aires, Argentina, *Commerson.* The scape in flower on the right hand side is designated as the lectotype. No. 3118 (P), collected by *Commerson,* Montevideo, (Uruguay), 1767, belongs to the same species. The following emended description is based on the material listed.

Emended description. — Lower part of *bulb* unknown, *bulb-neck* 1-1.3 cm. long, 5-8 mm. in diam. *Leaves* unknown; apparently not produced with the flowers. *Scape* 6.8-14.5 cm. tall. *Spathe* 2.4-3.3 cm. long, 3-4 mm. wide at the base, united below for 7/10 of its length, upper free part bifid with pointed segments to one side or opposite. *Umbel* 1-flowered. *Pedicel* 2.6-5.3 cm. long. *Ovary* 7-12 mm. long, 2.5-6 mm. in diam. *Perigone* upright, 2.2-3.5 cm. long, red or ruddy. *Tepaltube* 2.5 mm. long. *Tepalsegs* 1.95-3.25 cm long, 1.6 cm. wide in broadest part, oblanceolate, acute. *Stamens* upright, attached at the mouth of the tepaltube; three filaments 7.5 mm. long, each alternating with one of three, 10.5 mm. long; the longer stamens reaching to slightly less than half, the style about half, the lenght of the tepalsegs; anthers versatile. Style upright, filiform, up to 1.6 cm. long; stigma trifid, the forks recurved.

Through the kind cooperation of Dr. Alberto Castellanos, of the Fundacion Miguel Lillo, Buenos Aires, Argentina, and Director, Prof. Dr. Angel L. Cabrera, Museo de la Plata, La Plata, Argentina, attempts are being made to obtain living plants of *Zephyranthes tubispatha* so that chromosome determinations may be made.

II. *Habranthus robustus* Herb. ex Sweet (2n = 12) (from Argentina).

In contrast with *Zephyranthes tubispatha* described in Section I, above, *Habranthus*

robustus Herb. ex Sweet (Hort. Brit. ed. 2. 506. 1830) is a larger plant in all its parts, and it has stamens and style that are fasciculate, declinate-ascending, and the stamens are disposed at four different lenghts; and the flower is very pale pink. Therefore, the priority of the name, *Habranthus robustus* Herb. ex Sweet (1830) is clear.

III. *Zephyranthes puertoricensis* Traub (2n = 25) (from Puerto Rico and Jamaica).

In 1949, Dr. Winter of the Federal Experiment Station, Mayaguez, Puerto Rico, discovered a native *Zephyranthes* species in the northwestern part of the Island, and sent bulbs to the writer for identification. When they bloomed in 1951, the group of which they are a part was described as a distinct species, *Zephyranthes puertoricensis* Traub (1951b), which appeared to be nearest to the unnamed species from the Blue Mountains of Jamaica, first figured by Ker-Gawler in Bot. Mag. 1568. 1813, under a misapplied name as has been detailed under Section I, above. However, Dr. Flory (1944; 1957) indicated that the chromosome compliments of these two plants are similar, 2n = 25, and this was the deciding factor in coming to the conclusion that the two belong to the same species. Therefore, the unnamed Ker-Gawler plant had to be included under *Zephyranthes puertoricensis.*

Zephyranthes puertoricensis Traub, in Plant Life 7: 37. *fig. 4a.* 1951. Holotype: Traub No. 151 (TRA). Syn. — Ker-Gawl. (*description,* under misapplied name), Bot. Mag. 1568 (the *description* only, not the name). 1813 (fide Art. 55-2f, Int. Code); Herb. (*description,* under misapplied name), Append. Bot. Reg. 36 (the *description* only, not the name). 1821 (fide Art. 55-2f, Int. Code).

IV. *Zephyranthes insularum* Hume ex Moldk. (2 = 28) (from the West Indies?).

Recently Sealy (Bot. Mag. 232. 1954) referred *Zephyranthes insularum* Hume ex Moldk. (1952), with a chromosome complement of 2n = 28, to *Zephyranthes puertoricensis* (chromosome complement, 2n = 25), under the misapplied name, *Zephyranthes tubispatha* (see Section I, above), but this disposition is apparently untenable.

Zephyranthes insularum has been obtained by Hume (1940) from gardens in Key West, Fla., and Cuba. Recently Mr. & Mrs. Clint obtained it from a garden in Vera Cruz, Mex. There is a difference in chromosome complements of the two taxons, and also in morphological and physiological characters. In the test plot at La Jolla, Calif., *Z. insularum* is well suited to the slightly alkaline soil, whereas *Z. puertoricensis* appears to be retarded. Anyone who has seen the two species in flower side by side in a biosystematic experimental plot has surely noted the striking difference which has been pointed out by Hume (1940), who cultivated these plants under optimum conditions in Florida. The tepalsegs of *Z. insularum* (see Hume's plate 150) stand out distinctly in two circles as contrasted with tepalsegs in one circle in *Z. puertoricensis,* and thus they can be easily distinguished from each other. Hume (1940) has also pointed out that *Z. insularum* is a more frost tender tropical species than *Z. puertoricensis.* These differences and the difference in chromosome complements are sufficient for maintaining these two taxons as distinct.

The original description by Hume (1940) was based on fresh material and no holotype was indicated. Plate 150 (Hume, 1940) is hereby designated as the lectotype. If a holotype should later be found, then this can be restored to its rightful status.

Zephyranthes insularum Hume ex Moldk., in Plant Life 8: 152. 1952. Syn. — *Zephyranthes insularum* Hume, Herbertia 6: 123, *pl. 150.* 1939 (1940), *anglice*; Sealy (description under misapplied name), Bot. Mag. 232. (the *description* only, not the name). 1954 (fide Art. 55-2f, Int. Code).

V. *Zephyranthes nervosa* (H.B.K.) Herb. (from Venezuela).

The emended description of this species has been made on the basis of the type sheet, No. 3115 (P), from "Valles de Aragua", (Venezuela), and partly on the basis of Kunth's description. There is one scape in flower (with ovary missing); two scapes in fruit, and two leaves, on the type sheet. The combination of the scape in flower, and the leaf on the left hand side, is hereby designated as the lectotype.

Zephyranthes nervosa (H.B.K.) Herb., Amaryll. 172. 1837. Syn. — *Amaryllis nervosa* H.B.K. Nov. Gen. Sp. 1: 278. 1815. Type: No. 3115 (P).

Emended description. — *Bulb* unknown. *Leaves* produced with the flowers, linear, 27-27.7 cm. long, up to 3 mm. wide. *Scape*

10-13.3 cm. long. *Spathe* 2.2-2.7 cm. long, 3.5 mm. wide at the base, shortly united below (about 1/3 of its length), free upper part entire, acute. *Umbel* 1-flowered. *Pedicel* 2.3-2.8 cm. long. *Ovary* subglobose, trigonous. *Perigone* upright, white above, greenish in lower part, 3.6 cm. long; the longer stamens reaching to about half the length of the tepalsegs; the style slightly shorter than the longer stamens. *Tepaltube* 1 cm. long, enlarging toward the apex. *Tepalsegs* oblanceolate-acute, 2.6 cm. long, 7 mm. wide in widest part. Stamens upright, three 9.5 mm. long, three 11 mm. long. *Anthers* 7.5 mm. long, attached to filaments about 1/3 from one end. *Style* upright, slightly shorter than the stamens. *Stigma* very shortly but distinctly 3-lobed, lobes less than 1 mm. long. Capsule small, 4 mm. long, 6 mm. in diam., apparently 2-seeded or few-seeded per locule; seeds appear roundish or angular (seeds on type sheet are shriveled).

According to Kunth, the type locality is "near Cura, in the valleys of Aragua". On present day maps this is indicated as "Villa de Cura" in the province of Aragua, in Venezuela. He also indicates "Province Campeche" as another location, but there is no such province in Venezuela today, and perhaps he refers to Campeche State in Mexico.

The above description shows that Baker (Amaryll. 31. 1888) was napping and in error when he reduced Z. *nervosa* to the synonymy of the plant we now recognize as Z. *puertoricensis* (see Section III, above). In Z. *nervosa* the spathe is united below for only 1/3 of its length, with free portion entire, acute; the pedicel subequals the spathe, and the tepaltube is 1 cm. long. In Z. *puertoricensis* the spathe is united below for half its length, the free portion is bifid; the pedicel is distinctly longer than the spathe; and the tepaltube is only 3 mm. long. There are other differences. Therefore, Z. *nervosa* has to be maintained as a distinct species.

Through the kind cooperation of Dr. Tobias Lasser, Instituto Botanico, Caracas, Venezuela, seeds of Z. *nervosa* from the type locality, have been obtained. The seedlings have not yet flowered. Bulblets have been sent to Dr. Flory for chromosome studies.

VI. *Zephyranthes commersoniana* Herb. (from Uruguay).

This species (from Uruguay) is included because Commerson also collected Z. *tubispatha* (type locality, Buenos Aires) at Montevideo. However, the descriptions of these two taxons show that they are distinct.

The specimens on the herbarium sheet, No. 3117 (P), "flowers red and yellow", Montevideo, (Uruguay), May 1767, Commerson", have been identified as *Zephyranthes commersoniana* Herb. (Amaryll. 174. *pl. 29, fig. 3.* 1837). Herbert (1837) indicated "Commerson. ex Montevideo (Uruguay). Herb. Linn. Soc." as the type specimen. Baker (Amaryll. 33. 1888) may have cited another specimen, "Commerson. (Herb. Smith)". These two specimens have not been consulted. It may be that No. 3117 (P) was collected by Commerson at the same time that the other two were taken.

It is of interest to note, by referring to the description given below, that Baker (1888, p. 33) erroneously stated that the perigone of this species has no tepaltube. The tepaltube is present although it is very short — 2 mm. long.

Zephyranthes commersoniana Herb., Amaryll. 174. *pl. 29, fig. 3.* 1837; Baker, Amaryll. 33. 1888.

Emended description. — *Bulb* 1.8 cm. long, 1.6 cm. in diam., neck 2-2.8 cm. long, 7-10 mm. in diam. *Leaves* 3, produced with the flowers, linear, acute, 5.5-9.5 cm. long, 3.5-4 mm. wide. *Scape* 6.7 cm. tall at anthesis, elongating to 11.5-15 cm. tall in fruit. *Spathe* 1.9-2.1 cm. long, 2-2.5 mm. wide, united below for about 1/2 its length, free portion bifid, disposed to one side. *Umbel* 1-flowered. *Pedicel* 3.3 cm. long at anthesis. *Ovary* 6 mm. long, 4 mm. in diam. *Perigone* upright, 2.4 cm. long, red, yellow at the base. *Tepaltube* 2 mm. long. *Tepalsegs* 2.3 cm. long, 4.5-5.5 mm. wide, elliptic. *Stamens* of two lengths, three filaments 6.5 mm. long, alternating with three 9 mm. long, the longer stamens subequaling the style, reaching to about 2/5 the length of the tepalsegs. *Anthers* 3.5 mm. long, versatile. Style 1.1 cm. long. *Stigma* shortly 3-lobed, lobes rounded, about 1 mm. long. *Capsule* 8 mm. long, 1.4 cm. in diam. *Seeds* flat, black, D-shaped, 3 x 3.5 mm.

VII. Additional report.

After Dr. Flory and his collegues finish the chromosome studies of the taxons concerned, an additional brief report will be made in collaboration with these workers.

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Authors sets 1—7

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55. R. S. Cowan, Washington, D.C., U.S.A. (*Phan.-Leguminosae*).

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WORLD REPORT ON PALAEOBOTANY II

Vol. 11. *Rapport sur la Paléobotanique dans le Monde — World Report on Palaeobotany* — II, 1950-1954 (2e partie); 1955-1956 (1e partie). Édité par Éd. Boureau sous les auspices de l'Organisation Internationale de la Paléobotanique [International Organisation of Palaeobotany] (I.O.P.). Published with financial support of the International Union of Biological Sciences (*June 1958*) *(96 pp.*).
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Introduction: Sur l'organisation internationale de la Paléobotanique, par R. Florin, S. Leclerq et Éd. Boureau.
Paléobotanistes du monde, par Éd. Boureau. Traductions.
Bibliographie internationale de Paléobotanique 1950-1954 (2e partie) et 1955-1956 (1e partie) rassemblée par Éd. Boureau, avec la collaboration de C. A. Arnold, I. C. Cookson, T. M. Harris et K. R. Surange.
I. Généralités: Biographies, Méthodes, Techniques et Travaux généraux.
II. Précarbonifère.
III. Carbonifère et Permien. Flores Gondwaniennes.
IV. Mesozoïque.
V. Tertiaire et quaternaire.

REPERTORIUM PLANTARUM SUCCULENTARUM

Vol. 12. *Repertorium Plantarum Succulentarum* VII — 1956 (including supplements). Edited by G. D. Rowley under the auspices of the International Organisation for Succulent Plant Study — l'Organisation Internationale de Recherches sur les Plantes succulentes — der Internationalen Organisation für Sukkulenten-forschung — (International Commission for Succulent Plant Study of the International Union of Biological Sciences) (*June 1958*) (24 pp.).
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Editorial.
Descriptiones novae 1950 (supplement).
Combinationes novae 1951 (supplement).
Descriptiones novae 1953 (supplement).
Descriptiones novae 1954 (supplement).
Descriptiones novae 1956 (Asclepiadaceae, Cactaceae, Compositae, Crassulaceae, Euphorbiaceae, Ficoidaceae, Liliaceae).
Combinationes novae 1956 (Cactaceae, Compositae, Crassulaceae, Ficoidaceae, Liliaceae).
Nomina nuda 1956.

DIRECTORY OF SPECIALISTS IN PLANT TAXONOMY

Vol. 13. *International Directory of Specialists in Plant Taxonomy,* with a census of their current interests, compiled by A. C. de Roon. Published with financial support of the National Science Foundation of the United States of America (*August 1958*).
Free for all 1958 members of I.A.P.T.; *others*: D.fl. 19.—.

Contents

Preface (by A. C. de Roon and F. A. Stafleu).
Alphabetical list of Specialists in plant taxonomy.
Index of taxonomic and regional specialization.

INDEX HERBARIORUM

Vol. 14. *The Herbaria of the World* ed. 4. 1958. *Index Herbariorum,* a guide to the location and contents of the world's public herbaria. Part. 1, by J. Lanjouw and F. A.

STAFLEU. Published with financial support of the International Union of Biological Sciences (*Autumn 1958*) (ca. 240 pp.).
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Introduction.
Preface to fourth edition.
The Herbaria of the World.
I. List of Herbaria.
II. Herbarium Abbreviations.
III. Geographical Arrangement of the Herbaria.
General Index.

SYNOPSIS OF PROPOSALS

Vol. 15. *Synopsis of Proposals concerning the International Code of Botanical Nomenclature,* submitted to the Ninth International Botanical Congress — Montreal 1959 (*December 1958* or *January 1959*).

NEWS AND NOTES

INDEX TO THE BULLETIN OF THE TORREY BOTANICAL CLUB

Index to the Bulletin of the Torrey Botanical Club volumes 1-75 (1870-1948). By Harold William Rickett. The Science Press, Lancaster, Pennsylvania. July 28, 1955. vii + 997 pp. Photo-offset.

Botanists generally, as well as scholars in some other fields, may be interested in having their attention drawn to this useful work. As the Bulletin of the Torrey Botanical Club was founded in 1870 it is now the oldest botanical serial in America, and consequently it presents a cross-sectional view of the development of botany that is at once authoritative and continuous. Although contributions to the Torrey Bulletin have come chiefly from botanists in the United States, there have been some originating from a dozen or more other countries. Thus the Bulletin, in its modern form, is an internationally useful journal containing articles on all branches of botany.

This vast Index to the first seventy-five volumes has been compiled in his "spare time" over a period of several years by Dr. H. W. RICKETT, botanist and bibliographer of the New York Botanical Garden. It is divided into two parts, preceded by a brief sketch of the history of the Bulletin under its fifteen successive editors from the founding by W. H. LEGGETT in 1870 to the present decade. The first part consists of an index to the names of about 1200 authors and their approximately 5000 titles. The second part, comprising the next 888 pages, consists of an index to subjects, which, including names of plants, has more than 100,000 entries. As it is the aim of the Index to include references to every botanical name mentioned in the Bulletin, we are provided with an extremely useful record of the development of botany during the major part of a century. Not indexed are the contents of the Index to American Botanical Literature, a regular feature of the Bulletin since 1886 (volume 13). This information is available in the card index of botanical publications of the New World since 1886, published monthly by the Torrey Club.

This Index to the Bulletin of the Torrey Botanical Club also will be useful in many smaller libraries where a set of the Bulletin is not available, for the reader, once he is aware of the existence of a published record of the information he is seeking, may be enabled to find a reprint, or to acquire a back number of the Bulletin, or to get a microfilm copy of the desired article. As an example of the usefulness of this Index, for a rather small genus of angiosperms on which I am currently engaged in a monographic study, I find conveniently assembled on a single page more than 150 references to articles under about 40 different binomials. While it is true that many of these are trivial items, in order to comprehend the subject it is usually necessary that they be read if only to find that some of them must be discarded. It is certain that many other grateful users of Dr. Rickett's Index will continue to find it most useful.

G. NEVILLE JONES
University of Illinois

THE HERBARIA OF THE WORLD ed. 4

Circular letters have been sent to all institutes and herbaria listed in edition 3 as well as to a number of new addresses that have been brought to our notice. The directors and curators of all listed herbaria receive a new questionnaire to give supplementary information. We request all readers to send us names and addresses of herbaria that have been omitted so far in order that we may send questionnaires to the appropriate authorities.

J. Lanjouw

F. A. Stafleu

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the life sciences is September 15, 1958. Proposals received prior to that date will be reviewed at the Fall meetings of the Foundation's Advisory Panels and disposition will be made approximately four months following the closing date.

SEYMOUR HERBARIUM

The University of Wisconsin recently acquired the large private herbarium of the Rev. Frank C. Seymour, Dighton, Massachusetts, numbering over 20,000 specimens. This collection, originally started by the father of the former owner, the mycologist A. B. Seymour, was bought by the University of Wisconsin with aid from the Wisconsin Alumni Research Foundation and the J. J. Davis Memorial Fund, the latter endowed by the mycologist and former curator of the University of Wisconsin herbarium, J. J. Davis, a friend of A. B. Seymour. It will be housed in the University Herbarium, recently expanded by 66 new herbarium cases.

Present research of staff and students includes monographic studies in various groups (Leguminosae — Cassiae, — *Canavalia;* Capparidaceae; Meliaceae — Carapae; Liliaceae — Veratrae; *Physcia;* Arctic Lichens; Parasitic Fungi) as well as preliminary studies towards a Flora of Wisconsin. Nearly half of Seymour's specimens were collected in Wisconsin and will be a great asset in the completion of the latter project.

ARMIDALE HERBARIUM

On the 23rd. of February last a disastrous fire destroyed the Herbarium of the University of New England Armidale, N.S.W. Australia, (NE), as well as almost the entire Department of Botany. A valuable teaching collection was lost, in addition to types and other specimens accumulated in connection with research carried out over the last 20 years. The Professor would be extremely pleased to receive any donations of herbarium specimens, reprints or general teaching materials, all of which would be immediately acknowledged.

CÓDIGO INTERNACIONAL DE NOMENCLATURA BOTANICA

C. T. Tavares — *Código Internacional de Nomenclatura Botânica,* tradução, introdução e notas. Lisboa 1958, 54 pp.

An annotated and abbreviated version of the International Code of Botanical Nomenclature in the Portuguese language, especially for the use of University students in biology.

BOTANICKÁ NOMENKLATURA

J. Dostál, *Botanická Nomenklatura,* Vývoj rostlinného jména a výklad Mezinárodnich pravidel botanické nomenklatury — Praha 1957, Nakladatelstvi Československé Akademie věd. — 269 p.

An annotated Check version of the International Code of Botanical Nomenclature with many new examples, an historical and methodological introduction, a list of family names (*Phanerogamae*) and a terminological glossary.

BIBLIOGRAFIA BRASILEIRA DE BOTANICA

Bibliografia Brasileira de Botânica, vol. 1 p. 1-154 for 1950/55, edited by the Instituto Brasileiro de Bibliografia e Documentacão, Avenida General Justo, 171-3° andar, Rio de Janeiro.

This Brazilian bibliography on botany has been compiled by Dr. Carlos Toledo Rizzini of the Jardim Botânico de Rio de Janeiro. The system of classification is the U.D.C. with an alphabetical index of personal names and subjects.

NOTES ON THE PRODUCTS OF WESTERN AFGHANISTAN AND OF NORTH-EAST PERSIA

Although now old this publication by J. E. T. Aitchison is still a valuable work of reference for an area where the literature on plants and plant products is limited. It was published in 1890 in the Transactions of the Botanical Society of Edinburgh (vol. 18: 1-125) but some reprints are still available for purchase, price 10/— plus postage, and applications should be made to the Honorary Secretary, Botanical Society of Edinburgh, Royal Botanic Garden, Edinburgh, 3.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Tropical East Africa

R. Melville: *Gymnospermae. Cycadaceae, Podocarpaceae, Cupressaceae.* (16 pp., 5 plates).

B. Verdcourt: *Alangiaceae.* (4 pp., 1 plate).

R. A. Graham: *Polygonaceae.* (40 pp., 6 plates).

All London, 1958.

Pteridophytes of Japan

J. Ohwi: Flora of Japan: *Pteridophyta.* Tokyo, 1957. (164 pp., 68 plates; in Japanese, with Latin name index; price ca. $ 4.00).

Flora of the Netherlands

H. Heukels & W. H. Wachter: Beknopte schoolflora voor Nederland (Concise school flora of the Netherlands). 9th ed., revised by S. J. van Ooststroom. P. Noordhoff, Groningen, 1957. (xii + 424 pp., with keys and concise descriptions; includes numerous cultivated species: price D.fl. 6.50).

H. Heukels & S. J. van Ooststroom: Flora van Nederland. 14th ed., revised by the junior author. P. Noordhoff, Groningen, 1956. (890 pp., with keys, descriptions, and 1038 line drawings; includes many cultivated species; price D.fl. 11.50).

Cultivated Gesneriaceae

H. E. Moore, Jr.: African Violets, Gloxinias, and their relatives. A guide to the cultivated Gesneriads. The Macmillan Co., New York, 1957. (xii + 323 pp., 50 figs., 5 coloured plates. An account of all cultivated *Gesneriaceae,* with keys and descriptions, notes on cultivation, hybridization, cytology, and bibliography; price $ 10.00).

Drawings of British Plants

S. Ross-Craig: Drawings of British plants. Part XI. *Droseraceae — Ficoidaceae.* G. Bell & Sons, Ltd., London, 1958. (39 plates; price 9 s. 6 d.).

Pollen Morphology

G. Erdtman: Pollen and Spore Morphology / Plant Taxonomy. *Gymnospermae, Pteridophyta, Bryophyta* (illustrations). An introduction to Palynology II. Stockholm (Almqvist & Wiksell) and New York (The Ronald Press Co.), 1957. (151 pp., 265 ill., 6 plates).

* * *

Principes

The present editor of the Journal of the Palm Society is Dr. Harold E. Moore, Jr., Bailey Hortorium, Cornell University, Ithaca, N.Y. The Executive Secretary is Mrs. L. H. Wait, 7229 South West 54th Ave., Miami, Florida.

* * *

Monographs, revisions, etc., published in periodicals

L. Aristeguieta: El género *Symplocos* en Venezuela. Bol. Soc. Venez. Cienc. Nat. 18 (No. 88): 106-119 (1957). (With key, descriptions, and drawings).

A. Aubréville & F. Pellegrin: *Didelotia* Baill. et genres affinés, *Zingania* A. Chev. et *Toubaoute* Aubr. & Pellegr., genre nouveau. Bull. Soc. bot. Fr. 104: 490-492 (1957). (With key).

M. C. Carlson: Monograph of the genus *Russelia* (*Scrophulariaceae*). Fieldiana: Botany 29 (4): 231-292 (1957). (With key, descriptions, maps, illustrations, and index to exsiccatae).

V. L. Colbry: Diagnostic characteristics of the fruits and florets of economic species of North American *Sporobolus.* Contr. U.S. Nat. Herb. 34(1): 1-24 (1957). (With key, descriptions, and illustrations).

R. Corillion: Les Charophycées de France et d'Europe Occidentale. Bull. Soc. Scient. Bretagne 32(1-2): 1-502 (1957).

L. R. Holdridge: A key to the tripinnate and bipinnate leaved trees of Costa Rica.

Ceiba 6: 5-23 (1957). (With brief notes on habit and ecology).

H. H. Iltis: Preliminary reports on the flora of Wisconsin. No. 39. *Phrymaceae* — Lopseed Family. Transact. Wisc. Acad. Sci. Arts & Lett. 46: 105 (1957). (With map).

J. Ingram: The cultivated species of *Oxalis*. 1. The caulescent species. Baileya 6(1): 23-32 (1958). (With key and illustrations).

R. C. Koeppen: Preliminary reports on the flora of Wisconsin. No. 41. *Labiatae* — Mint Family. Transact. Wisc. Acad. Sci. Arts & Lett. 46: 115-140 (1957). (With keys and maps).

M.-A. Letrouit-Galinou: Révision monographique du genre *Laurera* (Lichens, Trypéthéliacées). Rev. Bryol. Lichénol. 26(3-4): 207-264 (1957). (With key, descriptions, and illustrations).

M. Machule: Die mitteleuropäischen *Thymus*-Arten, Formen und Bastarde. Mitt. thüring. bot. Ges. 1: 13-89 (1957). (With key).

R. H. Mohlenbrock: A revision of the genus *Stylosanthes*. Ann. Mo. Bot. Gard. 44(4): 299-355 (1957). (With keys, descriptions, illustrations, maps, and index to exsiccatae).

H. N. Moldenke: The genus *Castelia*. Phytologia 6(4): 232-241 (1958). (A revision).

G. K. Noamesi & H. H. Iltis: Preliminary reports on the flora of Wisconsin. No. 40. *Asclepiadaceae* — Milkweed Family. Transact. Wisc. Acad. Sci. Arts & Lett. 46: 107-114 (1957). (With keys, concise descriptions, and maps).

A. Pilát: Přehled evropských *Auriculariales* a *Tremellales* se zvláštním zřetelem k československým druhům (Übersicht der europäischen *A.* und *T.* unter besonderer Berücksichtigung der tschechoslowakischen Arten). Acta Mus. Nat. Pragae 13 B(4): 115-210 (1957). (With keys, descriptions, and photographs; in German).

M. B. Raizada & S. K. Jain: The genus *Eremopogon* Stapf and its affinities with *Schizachyrium* Nees. Jo. Bombay Nat. Hist. Soc. 54: 858-865 (1957). (With key).

V. E. Rudd: A revision of the genus *Chaetocalyx*. Contr. U.S. Nat. Herb. 32(3): 207-245 (1958). (With key, descriptions, illustrations, maps, and index to exsiccatae).

L. B. Smith: The *Bromeliaceae* of Colombia. Ibid. 33: 1-311 (1957). (With keys, descriptions, enumeration of specimens, and 88 illustrations by R. J. Downs).

M. Tagawa: *Pyrrosia* of Japan, Korea, and the Ryûkyû Islands. Jo. Jap. Bot. 32(12): 353-357 (1957). (With key).

E. K. Urban & H. H. Iltis: Preliminary reports on the flora of Wisconsin. No. 38. *Rubiaceae* — Madder Family. Transact. Wisc. Acad. Sci. Arts & Lett. 46: 91-104 (1957). (With keys, maps, and critical notes).

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Sweden: Mr Bo Peterson, Botaniska Museet, Lund. Postgiro 43.35.39.

U.S.A.: Dr R. C. Rollins, Gray Herbarium, Harvard University, 22 Divinity Avenue Cambridge 38, Mass.

* * *

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CARLETON ROY BALL

1873—1958

W. Andrew Archer (College Park, Maryland)

Carleton Ball was born in Little Rock, Iowa, June 12, 1873, and died, Washington, D.C., Feb. 2, 1958. He received a B.S. degree from Iowa State College in 1896 and an M. S. three years later. The same institution conferred an honorary D. Sc. in 1920. After graduation Dr. Ball taught botany for two years at his Alma Mater and experimented with seeds, weeds and control of fungous diseases.

He joined the U.S. Division of Agrostology in 1898 where he conducted studies of grasses for forages and lawns. He started the first agronomic plot experiments. In 1906 he initiated extensive pioneer experiments with grain sorghums and broomcorn to establish these in lieu of corn. In 1914 he engaged in the introduction, testing, classification and naming of wheat varieties, as well as in methods of dryland wheat production. From 1918 to 1929 he was in charge of the Division of Cereal Crops and Diseases in the U.S. Department of Agriculture.

Dr. Ball was a founder, and one-time president, of the Organization of Professional Employees of the Department of Agriculture. Also he was a founder and past president of the American Society of Agronomy and a former editor of the journal. As fellow of the society he encouraged fundamental research, especially in the solution of agronomic problems through a scientific approach.

Although his professional duties were dedicated to agronomic subjects he maintained a life-long avocation in the taxonomy of the genus Salix. He became the national authority on this large and difficult group. Not only did he publish continuously but also named many thousands of specimens for other botanists, for various Government agencies as well as for many herbaria of the United States and Canada.

Dr. Ball was responsible for about 45 new species, varieties and combinations in Salix. His extensive willow herbarium of about 25,000 sheets and reference library of several hundred items, together with manuscripts and files of correspondence were bequeathed to the U.S. National Arboretum in Washington. The gift is being marked by means of a bronze plaque.

In addition to the taxonomy of willows his interest extended widely to other phases such as ecology and utilization. A voluminous correspondence dealt with such diverse matters as willows as a source of honey, as food for wild life, as wind-breaks and erosion control.

His papers on Salix number about 45 and include treatments in several of the standard floras, such as Piper and Beattie, Flora of the Northwest Coast; Abrams,

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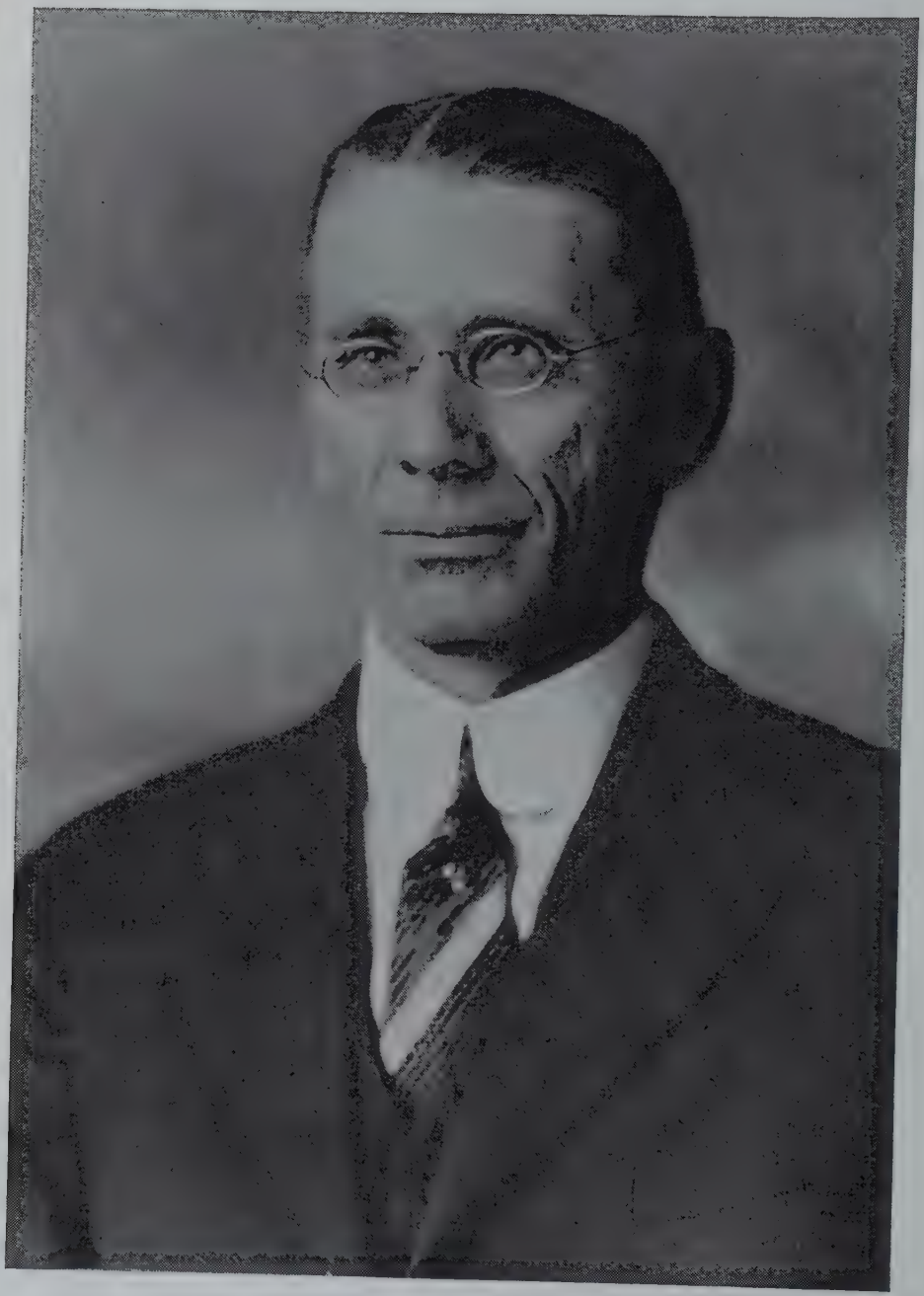

Carleton Roy Ball, 1873 - 1958

Illustrated Flora of the Pacific Coast; and Gleason, Illustrated Flora of the Northeastern United States and Adjacent Canada.

Up to the time of his death he was contributing to projected floras in Michigan, Nevada, Ohio and Tennessee. He was at work on the Salix of Alaska, a monograph of the genus for North America, and a history of agriculture but unfortunately did not complete the manuscripts.

Always of a friendly and cooperative nature Dr. Ball gave his time freely to assist others with willow problems. His death is a great loss to botany.

ON HILL, WIGGERS, AND NECKER, AND ALSO THE GENUS CONOCEPHALUM

J. Proskauer (Berkeley, Calif.)

The history of the name *Conocephalum* as currently applied to a member of the Marchantiales (Hepaticidae) involves among others three publications of the eighteenth century which severally and for different reasons are of dubious reputation and standing. As those publications are of general importance, I am placing my bibliographic findings on record.

John Hill, *A history of plants.*

This work first appeared in 1751 and has therefore not been considered for current purposes of botanical nomenclature. But Kuntze (1891, p. CXXX) drew attention to the existence of a second, post-Linnean edition. While the first edition is fairly common, this second edition is exceedingly rare. Through the courtesy of Professor Reimers (Dahlem) I am assured that the copy Kuntze had is not now available in Berlin. After prolonged search a copy was located in the Bibliothèque Nationale, Paris, the authorities of which kindly supplied a complete microfilm. A comparison of a copy of the first edition (Hill, 1751) in the Biology Library, University of California, Berkeley, with the microfilm of the Paris copy of the second edition (Hill, 1773) shows the following changes:

1) A new frontispiece of *Dionaea.* (This is designated as such on p. 643, but bound facing p. 643 in the Paris copy.)
2) A new general title page, actually constituting pages [iii] and [iv]. The oddest difference is that the long title now reads: "... of the various parts of the world ...", as opposed to the original: "... of the different parts of the world ...". "Enlarged with additional plates."
3) New pages 643—644 of *Dionaea, not* entered in the index.

But the Paris copy (cf. also Brunet, 1814, p. 103) is less complete than the Berlin copy was: according to Kuntze (1891) the latter also contained, besides the new pages on *Dionaea,* the new pages 645—671 dealing with orchids.

Although unlike Kuntze I was unable to compare the paper qualities, on the basis of typography I agree that the second edition, except for the additions listed above, consisted of remainder copies of the first edition, complete page by page, except for pages [iii] and [iv]. While the bulk of the work was thus presumably printed in pre-Linnean times, it nevertheless has to be considered in its entirety as a new publication of 1773, and, most regrettably, has to be taken into consideration for purposes of botanical nomenclature.

The book as such appears to be a choice example of hack work. Brunet (1814) remarked of it: "Ouvrage peu estimé" and Le Jolis (1894, p. 125) wrote of Hill: " "this third rate compiler" comme l'appelle un savant botaniste anglais." (Yet Hill, 1759, p. 204, successfully grew mosses from spores!)

Friedrich Heinrich Wiggers, *Primitiae florae holsaticae.*

Published in 1780 as a doctoral thesis in the University of Kiel, with J. C. Kerstens listed as the presiding professor on the title page. In the preface Wiggers acknowledged considerable, but by no means total, indebtedness to the writings and lectures of the "Praeceptor" G. H. Weber, especially as concerns the treatment of the cryptogams. "Nouam quam libellus tradit cryptogamicarum plantarum dispositionem, sed nondum ab omni parte absolutam, praelectionibus celeberrimi WEBERI, hausi."

In 1787 Weber published a supplement to the work, which begins: "Ex quo in *Primitiis Florae Holsaticae* vegetabilium vtriusque Ducatus indigenarum breuem adumbrationem exposueram, ...", which sentence (fide Christiansen & Christiansen, 1932, p. 7—8; also Dr. Willi Christiansen in litt.) has led to the acceptance of Weber as the author of the original work. Names first published in it have been invested with a remarkable variety of author citations (cf., e.g., in this Journal: Grummann, 1958, p. 55).

Having made a considerable search of the relevant contemporary and later literature, I am led to the following considerations and conclusions. It is well known that many of the earlier theses were more the work of the professor than the candidate, and indeed it was the custom to cite them under the name of the professor. The bone of contention in the case under consideration was surely this: on the title of Wiggers' dissertation the name of Professor Kerstens appeared, not that of Weber. (In the library catalogue of the Linnean Society [Savage, 1925], conservative in such matters, we still find the main entry of the work sub "Kerstens ..., *Praeses*"!) I interpret the introductory sentence of Weber pater (1787) and the citation by Weber fil. and Mohr (1807, p. XXX: "Wiggers, Fr. Henr. (Ge. H. Weber)") as protests to make clear who should have been the "praeses", and find no conflict with Wiggers' statements in his preface, which I accept at face value. I conclude that, unless otherwise stated in the work, a newly proposed name is to be credited to Wiggers alone. This would be so even if such a name indeed initially derived from Weber, as there is no denial that Weber pater consented to such use by Wiggers of certain of his unpublished material. A colleague or professor who freely suggests a name or diagnosis, or writes it on a herbarium label, receives no credit in nomenclature in this world, other than by courtesy of the publishing author. Who would wish to assess the relative degree of authorship of professor and candidate in many dissertations of our present time?

Noel Joseph de Necker, *Elementa botanica, genera genuina, species naturales omnium vegetabilium detectorum eorumque characteres diagnosticos ac peculiares exhibentia, secundum systema omologicum seu naturale, evulgata.*

In this work (Necker, 1790c [1]) the plant kingdom is divided into "genera". The names of these "genera" are newly coined. In content Necker's taxon "genus" is essentially the equivalent of the conventional taxon "family". Necker's "genera" are subdivided into "species naturales"; many of these bear names previously proposed for conventional genera, a considerable number have newly proposed names. In essence Necker's "species naturales" are the equivalent of conventional "genera". The "species naturales" are not further subdivided in this work, and, as there has been a considerable element of "splitting", the assumption that they constitute "unitary designations of species" to be rejected under Article 68 : 3 of the 1956 Code is close at hand. To understand how these names are to be interpreted, and why Necker should here have proposed a rival system to the Linnean one, certain of his other works require examination.

[1]) N.B. 1790 is the date of publication of all three volumes. The date 1791 which is frequently used (e.g., 1956 Code, p. 221, entry 150; Margadant, 1954) would seem to refer to the first reprint edition; cf. Pritzel).

Earlier Necker had adhered to the Linnean system. Thus his "Methodus muscorum" (Necker, 1771), except for some innovations at the ordinal level, is quite orthodox. Necker expanded a small amount of research, mainly on bryophytes in which he observed vegetative but not sexual reproduction, into a verbose and variously virulent attack on the sexual system of Linné, and in his later writings also on Hedwig's views (Necker, 1770, 1774, 1784a, 1784b, 1790b). "In hoc primo opere sexualis methodi vestigia sequentes, huic *linnaeanum* sermonem adaptare tenebamur, quia universis *sexualismi* principiis nondum aperte bellum denunciaveramus." Thus wrote Necker in 1774 (p. 136—7; slightly toned down in the French translation: Necker, 1775, p. 145—6), early in his war against the sexual system. The despised Cryptogamia of Linné engendered the lovely term "*Cryptomania*, immoderata cupiditas, quâ ab excogitato ficto, ad veritatem occultam traducere conantur, pertinaces sexualismi universi fautores, ut sexualis systema menda, scientiae cultoribus, credulisque botanicis perpetuô ignota fit." (Necker, 1790a, p. 20). Do the "cryptomaniaques" err out of ignorance or obstinacy? asked Necker (1790b, p. 8—9). Hedwig (1778, p. 262) was kind when he commented that Necker was a bit rash in poking fun at Linné. Indeed, nobody was right, but Necker certainly made himself obnoxious.

The displacement, relative to the Linnean system, of the categories in Necker's system of 1790 was probably largely based on his paper of 1780, in which he considered the formative influence of the environment on the morphology of organisms. The only clear interpretation of the system is to be found in the "Phytozoologie philosophique" (Necker, 1790b). From this work I draw the following conclusions:

1) Necker's "genus" is intended to replace *all* categories of the conventional system from family to class inclusive (pp. 12, 62).

2) Necker's "generic" and "specific" names are not to be combined into binomials (p. 66).

3) Necker's "species" are of two kinds: simple species, containing but a single "race" (= monotypic genera), and composite species, containing more than one "race" (= genera with more than one species) (pp. 19, 22, 64; cf. also 1790a, p. 21—22).

4) Whereas Necker conceived his "genera" and "species" to be immutable and indestructible, at the level of the "race" (= conventional species) he visualized change, in fact evolutionary change (p. 19 ff.).

5) To designate a particular "race", its name is made to follow the name of its "species": the result is an orthodox binomial, although what to others is the generic name in that binomial to Necker was the specific name, and what orthodoxly is the specific epithet was racial to Necker (p. 66—67). Although the examples cited by Necker concern a "composite species", I take it that the treatment could be extended to "simple species".

My purpose had been to state the case for the rejection of Necker's "species" under Article 68 : 3 of the 1956 Code, believing them to be "unitary designations". It is with regret that I conclude that the names of his "species naturales" can no more be denied acceptance as validly published generic names, than a family name deserves of rejection for having been published under the label "natural order".

CONOCEPHALUM Wiggers

It is not my intention to recapitulate the full nomenclatural history of the plant called *Marchantia conica* by Linné, or indeed to attempt here a listing of all the generic names validly proposed to contain it, and published later than those considered here by me. For ample background material the reader can consult Le Jolis (1894), and augment this by reference to Trevisan (1877), Kuntze (1891, p. 625), and Underwood (1895). But new matter has come to light which affects the choice of

name and requires action. (There is still the possibility that by minute scrutiny of old works *Hepatica* the liverwort may win out over *Hepatica* the buttercup, but at the moment the latter, *Hepatica* Miller, seems to have a priority of 9 years over the former, *Hepatica* Adanson, and the Hepaticidae are deprived of their due.)

Hill (1773, p. 118—119) produced an account which in essence is Micheli's treatment (1729, p. 3) of *Hepatica*. But Hill changed the generic name to *Conicephala* [2]), employing the name *Hepatica* (l.c., p. 488), for the ranunculaceous plant. *Conicephala* was subdivided by him into three species, corresponding to Micheli's three species to which due reference is made. It is clear from Micheli's figures (tab. 2), and reasonably so from the two texts, that the three species respectively are, in modern nomenclature, *Conocephalum conicum* (L.) Underw., *Reboulia hemisphaerica* (L.) Raddi, and *Mannia androgyna* (L.) Evans (*Grimaldia dichotoma* Raddi). There is general agreement about this identification (cf., e.g., Lindberg, 1877), although I might add that the two English specimens cited, inter alia, by Hill under the third species cannot have belonged to *Mannia*, this genus being wanting in Britain. Bearing in mind that the name *Conicephala* fits best the first species *(Conicephala longifolia capitulo acutiore* of Hill), and that Micheli chose the name *Hepatica* precisely because this first species (his *Hepatica vulgaris, major, vel officinarum Italiae*) bore the equivalent Italian vernacular name "fegatella", I hereby choose as lectotype of *Conicephala* Hill (1773, p. 118) this first species, *Conicephala longifolia* ... Hill (1773, p. 119), which I in turn typify by: Micheli, 1729, tab. 2, fig. 1. Although in this illustration female lobes have somehow been grafted on a male plant [3]), the identification is above doubt, and, as matters stand, the name *Conicephala* Hill is the earliest available generic name to be applied to *Marchantia conica* L., if that species is removed from the genus *Marchantia*. It so happens that there is no acceptable type specimen for *Marchantia conica* L., Spec. plant. 1138, 1753, in the Linnean herbarium (cf. Savage, 1945). The only specimen there, belonging to this plant, is on sheet 1269 : 10 (photograph seen). It derived from Ehrhart and is labelled "Marchantia conica?" in the hand of Linné fil. This makes it mandatory to select a lectotype for *Marchantia conica* L., and I select Micheli, 1729, tab. 2, fig. 1, which was originally cited by Linné. Thus, indirectly, *Conicephala* Hill has *Marchantia conica* L. as its type!

Now, turning to Wiggers, first let me provide a copy of the relevant entry (1780, p. 82—83):

"CONOCEPHALVM [v])

Flores 4—5 fidi, disco lanuginosi, basi receptaculi 4—8 loculari affixi.

917. Conocephalum *trioicum.*

Marchantia *conica* Linn.

Habitus Marchantiae, sed inflorescentia diversissima, ita vt Iungermanniae magis affine sit, quam Marchantiae."

v) Hill. *Hist. of plants* p. 118.

2) Endlicher (1836, p. 44 cited "Conocephalus Hill. *syst. 119*". I feel certain that this is a multiple error for "Conicephala Hill. *hist. pl. 118—119*". Mr. R. Ross informed me that, according to a pencilled note in the British Museum copy of Pfeiffer, Mr. A. Gepp had come to the same conclusion, and also that there does not appear to be such, or a related, entry in the general index to Hill's "Vegetable system". I similarly could not trace the reference in the incomplete set of the work available to me, which set however contains, in the first edition only, those parts (Hill, 1759, 1761) that, according to the bibliographies, contain the only two pages numbered "119" in the entire series. Nor does it apply to Hill's "Outlines of a system of vegetable generation" (1758).

3) It is of interest to note that Micheli, fide fig. 1, L and M, actually dissected out antheridia from male receptacles.

It is amazing how many things seem to be wrong with this brief text, starting with the wrong rendering of Hill's name *Conicephala*. When towards the end of last century attention was first drawn to *Conocephalum*, it is not surprising that the reaction was highly unfavourable. I cannot resist to quote a contemporary piece of doggerel from the Stephani correspondence for which I am indebted to Mrs. Ruth Bonner (Genève):

"Mit *Conocephalus*, der zweimal conisch,
Kann man nur Kegel schieben — streng platonisch.
Herr Schiffner hat ihn unlängst aufgegeben
Und lässt nun *Conocephalüm*-pchen leben.
Auf *Fegatella* passt die Diagnosis
Wie Zolas "Nana" in die Bücher Mosis,
So recht ein Unding, eine Dreigeschlechts-Hetäre,
Herr Wiggers dankt im Grabe für die Ehre."

The author, unexpectedly,
was E. Levier (Firenze).

When reading Wiggers' diagnosis it seems to fit *Reboulia*, but not *"Conocephalum"* (cf. the objections of Margadant, 1954, p. 128). Although Professor Doctor H. Reimers (Dahlem), a native of Holstein, pointed out to me that *Conocephalum* was common in the area, whereas *Reboulia* is there rare and was only recorded after Wiggers' time, I found this difficulty unsurmountable until I received the brilliant solution from Mr. Kurt Fitz (Naturhistorisches Museum, Wien). In his words:

"4) "Flores 4—5 fidi": Unter "flores" versteht der Autor, wie aus der kurz zuvor unter Nr. 911 gegebenen Beschreibung von Jungermannia Trichomanis (= Calypogeia) hervorgeht: "setis parvis albidis, floribus nigris villo medio rufo", die geöffneten Kapseln, die in ihrer Mitte die von den Elateren durchsetzte "wollige" rotbraune Sporenmasse tragen. Der stehenbleibende Kapselrest reisst ferner zwar bei Conocephalum conicum bis zur Hälfte in perianthartige Lappen ein, wogegen bei Reboulia der Kapselrest einfach glockenförmig bleibt.

5) "disc*o* lanoginos*i*": hier liegt offenbar die Hauptschwierigkeit, die sich jedoch folgendermassen leicht auflösen lässt. Es ist nämlich nicht gesagt, dass die "Blüten" = Kapseln *auf* einem behaarten Diskus stehen (in welchem Fall es heissen müsste "disco lanuginos*o*"), sondern wörtlich: die Blüten sind (1) 4—5-spaltig, (2) auf dem Diskus wollig ("lanuginosus" bezieht sich auf "flores", nicht auf "discus"), (3) an der 4—8-fächerigen Basis des Receptaculums befestigt. Was mit der "lanugo" (Wolle) auf dem Diskus der "flores" (Kapseln) gemeint ist, geht ausser der oben zu Calypogeia Trichomanis zitierten Stelle völlig eindeutig aus der Descriptio von "Marchantia conica" bei Weber — auf den sich Wiggers ja ausdrücklich beruft — in seinem Specilegium Florae Goettingensis von 1778 pag. 167 hervor: "Ex hisce loculis [erg. pilei conici] flores prorumpunt pedunculati, ... adultiores brunnei coloris, mediatenus quinquefidi, ..., intus foventes lanuginem polliniferam" (= die bis zur Mitte fünfspaltigen Blüten, die im Innern die pollentragende Wolle bergen). — Darf ich, um der Wahrheit die Ehre zu geben, hinzufügen, dass auch mir die Lösung erst nach einem Tag ergebnislosen Nachdenkens ganz plötzlich in den Sinn schoss, gerade als ich das soeben auf der Maschine geklopfte "i" des "lanuginos*i*" in ein "o" verbessern wollte."

It might be added that Wiggers' final observation is also derived from Weber's remarks about *Marchantia conica* (1778, p. 168).

What is *Conocephalum "trioicum"?* The best I can do is to attempt to explain the epithet by further reference to Weber's diagnosis (1778, p. 168—169). He here

distinguishes *three* reproductive structures: firstly, the "flowers" producing the "pollen" (= sporophytes); secondly, the "female calyces" (= antheridial receptacles); thirdly, on "non flowering" specimens, (etiolation) sprouts. The choice of this name alone suggests Wiggers, rather than Weber, as the true author! An original specimen has not been found. Prahl (1895) apparently could not locate the specimens of the "Flora holsatica". My request for a search for *Conocephalum trioicum* under various possible names elicited negative replies from the following herbaria: KIEL, CP, S-PA, W, and GOET. With the generic description now clarified, and with *Marchantia conica* L. quoted in synonymy by Wiggers, the epithet in *Conocephalum trioicum* Wiggers is to be considered as an illegitimate substitute for the available epithet *conica* L. It finally occurred to me that indeed there was a reason for the coining of the new epithet *"trioicum":* to avoid one of those pleonasms so abhorred by our predecessors.

Yet *Conocephalum trioicum* Wiggers, nomen illegit. pro *Marchantia conica* L., cannot serve as the type of *Conocephalum*. For strictly speaking Wiggers (1780), by his footnote, credited the name *Conocephalum* to Hill, although he changed it, perhaps unintentionally so [5]). This has up to now been conveniently disregarded, as Hill's publication was believed pre-Linnean. Rather than introducing the new complication of writing "*Conocephalum* Hill ex Wiggers" I follow usage by treating it as a new name, a treatment I consider justified only because later in this paper I am proposing Wiggers' name for conservation. Nevertheless, through Wiggers' reference, *Conocephalum* Wiggers is an illegitimate substitute name for *Conicephala* Hill, and as such is based on the same (lecto)-type, *Conicephala longifolia* ... Hill, which in turn has Micheli, 1729, tab. 2, fig. 1 as its lectotype, which is also the lectotype of *Marchantia conica* L. (vide supra)! Which is all perfectly legal and the same thing in the end!

Necker (1790c, vol. 3, p. 344) erected the "natural species" *Conocephalus*. A questionable proposal to conserve the flowering plant name *Conocephalus* Blume against *Conocephalus* Necker, in conjunction with *Conocephalus* Necker as republished by DuMortier (both latter names have *Marchantia conica* L. as lectotype), has been made (Margadant, 1954) and is currently under discussion. It has given rise to much debate in the nomenclature committees. I should merely add that, according to my findings, the name *Conocephalus* Necker is illegitimate not as a unitary designation, but because of the existence of earlier available names (*Conicephala* Hill, *Conocephalum* Wiggers) based on the same type. It is certainly not the correct name for the liverwort, nor required for it. The suggestion that *Conocephalum* Wiggers and *Conocephalus* Blume are homonyms (cf. Verdoorn, 1938) is refuted by the example of *Peltophorus* and *Peltophorum* in Art. 75, 1956 Code.

During the second half of last century our plant was referred to as *Conocephalus conicus* by some, and placed in Raddi's genus *Fegatella* by others. Schiffner (1893, p. 34), when drawing attention to *Conocephalum* Wiggers, for a very amusing reason himself adopted *Conocephalus* Necker, accidentally quoting, instead of the correct date 1790, the running number of the entry in Necker's work: 1759, thus giving Necker's name priority over *Conocephalum* Wiggers of 1780!

After a nomenclatural odyssey of over two centuries, there is finally worldwide agreement about the plant called by Linné *Marchantia conica;* it is placed in the genus *Conocephalum*. I believe that here is a valid case for involking the much

[5]) Hill (1773) treated the name *Conicephala* like all the other generic names in his work, and used it as a noun in the singular. The opening sentence is in fact "CONICEPHALA is a genus of mosses ..." (p. 118). As indeed a thallus may bear more than one of the "conical heads" there is really nothing wrong with that. Perhaps Wiggers never saw the entry with his own eyes and assumed *Conicephala* to be the plural of a generic name *Conocephalum*.

misused process of conservation of generic names, and make the following proposal.

38) Nomen genericum conservandum propositum: **Conocephalum** Wiggers, Flora holsatica 82. 1780.

LT.: *Conicephala longifolia capitulo acutiore* Hill = *Marchantia conica* L.

Nomen rejiciendum propositum: *Conicephala* Hill, A history of plants ed. 2. 118. 1773.

LT.: *C. longifolia capitulo acutiore* Hill = *Marchantia conica* L.

The genus *Conocephalum* Wiggers is currently considered as containing two species:

1) *Conocephalum conicum* (L.) Underwood (1895, p. 67), which combination is usually wrongly credited to DuMortier, who however made the combination *Conocephalus conicus* (L.) DuM., and

2) *Conocephalum supradecompositum* (Lindberg) Steph., (Incl. *Funicularia japonica* Steph.).

Summary

A second, post-Linnean, edition of Hill, "A history of plants", is described.

For purposes of botanical nomenclature Wiggers, not G. H. Weber, should be considered as the author of the "Flora holsatica".

The names published as "species naturales" by Necker are to be considered as validly published generic names.

A lectotype species is chosen for the genus *Conicephala* Hill and the genus *Conocephalum* Wiggers, a substitute name for the former. The common lectotype species of these genera, and the species *Marchantia conica* L., are in turn provided with a lectotype, the same lectotype serving for both.

Conocephalum Wiggers is proposed for conservation against *Conicephala* Hill.

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CONFUSION IN ALISMA

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Formerly, the *International Code of Botanical Nomenclature* included a general statement that it should be "founded on considerations sufficiently clear and forcible for everyone to comprehend and be disposed to accept." This statement was removed from the present edition as being superfluous. Perhaps it should be reinstated, in view of the appearance of a recent revision [1]) of *Alisma*, in which the author was disposed to follow neither the Code nor customary practices in presenting taxonomic information.

Two of the species recognized in this revision are treated as consisting of two or more varieties. However, in violation of Article 26 of the *Code*, the nomenclaturally typical variety in both species is given an epithet different from that of the species. Of the three named varieties of *A. plantago-aquatica* L., it is apparently var. *michaletii*

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1) Albert J. Hendricks, A Revision of the Genus Alisma (Dill.) L., American Midland Naturalist 58 : 470—493. "1957" [1958].

(Aschers. & Graebn.) Buch. which should instead have been called var. *plantago-aquatica*. For although the author does not specifically indicate his agreement with Samuelsson, it is implied in his statement: "Samuelsson (1932) considered this same European taxon ... to be the true *A. plantago-aquatica* L. (sensu Samuelsson). This same European taxon has been included in the present analysis in *A. plantago-aquatica* var. *michaletii*."

Of the two varieties given for *A. gramineum* Gmel., it is not even clear which is typical. In one place (p. 485) it is stated that var. *angustissimum* "is limited to North America" [2]). Four pages later, this is modified to: "With a few exceptions, found only in North America." One of the exceptions, presumably, is intended to be the type, for the type locality is said to be "Near Germersheim" [Germany] [3]). Half of the synonymic references cited under this variety also refer to European works. However, the only specimens cited are North American, and the variety is not mapped as occurring in Europe. The combination *A. gramineum* var. *angustissimum* (DC.) Hendricks is published as new. Either it or var. *graminifolia* (Wahl.) Hendricks, also published as new, is illegitimate. The latter variety is said to be "widely distributed" in Europe; presumably the author intended it to include the type (cf., e.g., synonymy in Clapham, Tutin, & Warburg, Fl. Brit. Isles, p. 1178, under ssp. [as "spp."] *gramineum*), and he should therefore have taken up the epithet "var. *gramineum*."

The epithet "*angustissimum*" is credited to De Candolle, Fl. Franç., ed. 3. 3: 189. 1815. On this page, however, one finds the epithet "*angustifolia*". What was intended (I am informed by the author) was a citation to vol. 6, page 312, of the same work, which is the source of the epithet adopted.

The great carelessness in checking and citing of references, the inexplicable bibliographic inconsistencies, and an apparent failure to study any type material, cast considerable doubt on the validity of the entire nomenclatural structure of this treatment.

Although the chief function of the present note is to call attention to the adoption and publication of illegitimate and inaccurate names and the failure clearly to indicate which varieties are typical, a few other observations are in order. It is stated that "The herbarium specimens listed after each taxon diagnosis indicate the geographic range of individuals included. The total number of specimens examined is noted in parentheses ..." No indication, however, is made of the basis for the selection of the particular specimens cited. Thus, we find the cited specimens, the distribution map, and the generalized statement of distribution quite at odds with each other in *A. gramineum* var. *graminifolia* (i. e.,? var. *gramineum*), which is said to be "common in all of the Canadian provinces and in all of the United States bordering Canada" [4]). An outline distribution map shows a range entirely across the northern United States except for Maine, and not in the Canadian provinces of Nova Scotia, New Brunswick, Prince Edward Island, or Newfoundland (including Labrador). And the text cites specimens only from Quebec, Saskatchewan, and Alberta in Canada and of the 12 states bordering Canada, only from New York, Minnesota, North Dakota, Montana, and Washington. If specimens were seen by the author from the other seven provinces of Canada and the other seven states bordering

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2) The abstract in Dissertation Abstracts 15 (11): 1986—1987 (1955) states "ordinarily found only in North America ..."

3) It is entertaining, if hardly logical, to learn that the type locality was "collected by W. D. J. Koch" (enough of Germersheim was evidently left by the collector for it to appear on current maps).

4) The abstract in Diss. Abstr. (loc. cit.) has still a fourth version: "found in the northeastern United States and Canada."

Canada, it would have been helpful to modify the map accordingly and to give at least one citation from each state and province in support of the general statement.

One hopes (though there is much evidence to the contrary) that the general accuracy of the citations is not represented by the only one from Michigan: "North of Cork Lake, F. C. Gates n. 15420 (F)." Since not one of Michigan's 11,000 lakes is named "Cork", it seemed reasonable to assume that this mythical location is an error for "Carp Lake", where Gates has collected. This assumption has been confirmed by Dr. T. Just, who has kindly checked for me the label on the specimen. The label also gives the location as being in Emmet County — a fact which should have been noted since this Carp Lake extends into two counties, and the other five Carp Lakes in Michigan are in other counties.

A number of typographical errors can conceivably be attributed to the printers. The author may be entitled, if he wishes, to the unique luxury of full sentences complete with verbs in the not always dichotomous "keys". But the unusual presentation of bibliographic data is a real source of confusion — apart from its errors. While the *Code* makes specific recommendations (46A, 50B, 50D) for the use of *ex*, there is nothing in Appendix V (Guide to the Citation of Botanical Literature) — nor in accepted practice — to suggest that it be used in *every* bibliographic citation (e.g., "Rafinesque ex Med. Repos.", "Lunell ex Bot. Gaz.". "Pursh ex Pl. ([sic] Am. Sept.", etc., throughout). Such unnecessary usage is actually misleading in view of the specialized functions of *ex*.

Among the more confused citations are "*A. lanceolatum* Gray ex Gray Card Index Syst., Univ. of Minn. 1951" and "*A. Geyerii pumilum* Lunell 1908 ex Gray Card Index, Univ. of Minn. 1951." The most reasonable interpretation of these is that the author consulted the set of the Gray Herbarium Card-Index at the University of Minnesota in 1951 (although this information would be more relevant, if anywhere, under Acknowledgments). Gray had nothing to do with the name "*A. lanceolatum*" (nor with the authorship of the Index), and "Syst." has nothing to do with the title of the Index. (The card refers to "*Alisma lanceolatum* Auct." [a homonym of *A. lanceolatum* With.]). The card on which the "*A. Geyerii pumilum*" reference is based gives a perfectly good citation to the publication of this combination. This was published, in fact, on the same page as cited by Hendricks for two other names only two and three lines above this one. (One of these citations, however, is totally incorrect as to authorship and place of publication.) The 1908 date is completely irrelevant; the name was published in 1915. The author citation is incomplete, as it was published as a new combination by Lunell, who used the spelling "*Geyeri*".

"× *A. rhicnocarpum* Schotsman" (for the preferable *A.* × *rhicnocarpum*) is identified only as "1949". The reference from the *Index Kewensis* is "Ned. Kruidk. Arch., Versl. lvi. 202" and even if this were not seen by the author (as is certainly true of a number of his references) it might have been useful to quote it.

Although the inside cover of the journal in which this paper was published has long recommended that its title be abbreviated "*Amer. Midl. Nat.*", two different abbreviations (in addition to full citation) are used, in line with general inconsistency regarding abbreviations (e.g., "D.C." and "DC" — but not the generally accepted "DC.").

Why authors' names preceding works cited are sometimes in the possessive and sometimes not, is an unexplained mystery: e.g., "Ehrhardt. ex Ledebour's Fl. Ross. iv: 40. 1821. (nomen nudum)". This, incidentally, is one of the few cases in which *ex* is correctly used. However, the date is erroneous (it was 1853). The name was published by Ledebour as a synonym only (pro syn.). And Ehrhart is neither an abbreviation to be followed by a period nor is it spelled with a "*d*".

While such matters as those discussed above (and additional examples could easily

be given) would not necessarily detract from the validity of any research upon which taxonomic conclusions are based, they do tend sufficiently to becloud the material as to discourage the reader. It is, however, impossible to find any real evidence presented for the taxonomic treatment. The only original information seems to be the fact that serological tests were performed and the not very definitive measurements of the guard cells of the abaxial surfaces of the "herbaceous sepals". The value of these measurements is reduced by the failure to state by which of several possible methods they were obtained.

One wonders at the intended *meaning* (apart from the absolute absence of evidence) for such statements as: "Apparently the plants of this variety are more heterogeneous than those in *angustissimum* as they migrated from North America to Europe."

Alisma still remains a genus about which we await the clarification which is quite probably obtainable from an application of modern taxonomic techniques and a careful and accurate presentation of the results.

The nomenclatural status of Daedalea Pers. ex Fr. and related genera

Oswaldo Fidalgo (Rio de Janeiro) *

The genus *Daedalea* was described by Persoon (1801, p. 499), being founded on five species: *D. quercina, D. gibbosa, D. confragosa, D. angustata* and (?) *D. suaveolens.*

Art. 11 of the International Code (1956) prescribes: "For any taxon from order to genus inclusive, the correct name is the earliest legitimate one validly published with the same rank, except....". In Art. 12 we find "A name of a taxon has no status under this Code unless it is validly published", and in Art. 13 "Valid publication of names for plants of the different groups is treated as beginning at the following dates.... f — Fungi Caeteri (all fungi except *Uredinales, Ustilaginales* and *Gasteromycetes),* 1 Jan. 1821. (Fries, 1821).

Daedalea Pers., a genus published before 1821, thus *has no status under this Code,* but Fries (1821, p. 331—337) accepted Persoon's name and validated it, and for this reason it becomes *Daedalea* Pers. ex Fr. However, the genus *Daedalea* in the Systema has a circumscription much different from Persoon's genus because Fries introduced stipitate species in Trib. I — *"Stipitatae".* He included all the species of Persoon's Synopsis in Trib. II — *"Dimidiatae* (sessiles)", and placed three species in Trib. III — *"Resupinatus".* Trib. I includes *D. maxima, D. biennis* and *D. brasiliensis;* in Trib. II, with 25 species, are found all the species indicated in Persoon's work, with *D. quercina* as the first species in the group. Undoubtly Fries considered the *"Dimidiatae"* the most typical group, but Art. 7 — note 1 of the Code states: "The nomenclatural type is not necessarily the most typical or representative element of a taxon; it is merely that element with wich the name is permanently associated". Fries, in the Systema did not indicate any of these species as the type or mention any of them in the generic description, so any of the species indicated in Fries' work under the genus *Daedalea* could be its type. Furthermore Appendix IV (4) prescribes "Mechanical systems such as the automatic selection of the first species or specimen.... should be avoided as unscientific and productive of possible future confusion and further change. The original description of the taxon concerned should be the basic guide".

Which is the original description — Persoon's diagnosis or the first valid description given by Fries? We can answer this question with the case of the genus *Agaricus.*

In Fries' Systema (1821, p. 8) we find *Agaricus* Linn. Gen. 1074, and in Linnaeus' Genera Plantarum the genus *Agaricus* Dill. appears. So, Fries received the generic name from Linnaeus and Linnaeus from Dillenius. For this reason, Murrill (1905,

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p. 83) stated "The type of the genus *Agaricus* is *A. quercinus* L. This is the only species common to Linnaeus and Dillenius, the author of the genus". With this as his basis, Murrill transferred many polypores to *Agaricus*.

Although *A. quercinus* L. belongs in the *Polyporaceae*, today *Agaricus* is universally recognized as the type genus of the *Agaricaceae*. Thus neither Linnaeus' nor Dillenius' works were considered in the choice of the type. Instead, the Systema constitutes the basis for typification.

The same reversal of generic concept occurred in the case of the genera *Hexagona* and *Favolus*. This also has been commented on by Murrill (1905, p. 99): "This genus [*Favolus* Beauv.] was founded upon a single species, *F. hirtus* Beauv. which, although commonly known under the name of *Hexagona*, recalls the true honeycomb-like structure of the hymenium which was originally the distinguishing feature of the genus *Favolus*. The genera *Hexagona* and *Favolus*, both monotypic in origin, were interchanged by Fries because the species were unfamiliar to him, and they have been incorrectly used ever since. In the Systema, Fries followed Beauvois and included *Hexagona* under the subgenus *Favolus* of *Polyporus*. In the Epicrisis, Fries includes *F. hirtus*, Beauvois' type, in the genus *Hexagona* and follows it with *H. Mori*, Pollini's type. He then begins his genus *Favolus* with *F. europaeus*, a synonym of *H. Mori*".

Rogers (1949, p. 447) has discussed this and states that "those publications [*Favolus* Beauv. and *Hexagona* Pollini] are of course pre-Friesian and invalid". It is pertinent to learn which are the types indicated for these genera more recently.

Many authors, such as Cooke (1953, p. 34), Rogers (1949, p. 447), and Donk (1933, p. 129) mention *Favolus brasiliensis* (Fr.) Fr., because this is the only species that appears in the Elenchus (1828, *1* : 44). Overholts selected *Favolus europaeus* Fr., which is the first species included under *Favolus* in the Epicrisis. Rogers (1949, p. 448) in his observations concerning the typification of *Hexagona* concluded: "Any species treated as a *Hexagona* in the Epicrisis which agrees with Fries' original description (as *H. Mori* does not) can be designated as lectotype". So we have Clements & Shear suggesting *H. crinigera*, Overholts, *H. Wrightii*, Donk, *H. Mori*, Cooke, *H. apiaria*, etc... Whatever the validity of these various suggestions, one principle is apparent: The type description is not necessarily the first description, but the first valid description. In the study of *Daedalea's* typification, Persoon's work must be forgotten (see Principle IV of the Code) — the original description and startingpoint is the Systema of Fries and any species of *Daedalea* indicated in this work could be chosen as type.

By examining different works and asking many mycologists, we reached the conclusion that five species have been indicated as the type of *Daedalea: D. quercina, D. biennis, D. confragosa, D. unicolor* and *D. maxima*.

1 — *Daedalea quercina:* The species first indicated by Fries (1876) as the type of the genus in question and so considered by the majority of authors, including Murril (1908), Donk (1933), Bondarzew and Singer (1941), Cunningham (1948), Cooke (1940 and 1953), Overholts (1953) and Kotlaba & Pouzar (1957), and also recognized as a good choice by G. W. Martin, A. H. Smith, D. A. Reid and R. W. G. Dennis in correspondence.

Martin, examining the typification of *Daedalea*, wrote to us his arguments: "Persoon's genus was reasonably well characterized, and his inclusion of *quercina* and *confragosa* among the four unquestioned species listed (the fifth, *suaveolens* was marked (?) and cannot, therefore, be taken into account) shows that his concept of *Daedalea* was essentially that of most modern students, excluding those who follow Patouillard. It is clear that only *Dimidiatae* [of Fries] corresponds with *Daedalea* of Persoon and it seems to me that the type of *Daedalea* Pers. ex Fr. must be selected from species included by both Persoon and Fries. *D. quercina* would be an excellent choise. It is interesting to note that two slightly later contemporaries held the same view. W. J. Hooker (Fl. Scot. *2* : 26. 1821) lists only *quercina* under the genus. S. F. Gray (Nat. Arr. Brit. Pl. *1* : 638. 1821) lists only the five species recognized by Persoon, one under a different name, and including *quercina*. Even more important for the purposes of the present discussion, Fries, 17 years later (Epicrisis 492. 1838) restricted *Daedalea* to what is substantially the *Dimidiatae* of the 1821 treatment, excluding *biennis*, which he transfers to *Polyporus* (p. 433).

"*Daedalea*, as limited in the Epicrisis, seems to have been generally accepted up to 1900 by all major authors including Karsten,

Fries in his later Summa Vegetabilium Scandinaviae and Patouillard himself (Hymen. Eur. 134. 1887). Murrill's selection of *D. quercina (A. quercinus* L.) as the type, although dating only from 1908, is in accord with Persoon, with Fries of 1838, and with almost universal usage outside of France ever since".

One of the most pertinent points was suggested by Reid who examined this case with Dennis: "Fries himself was the first person to typify the genus. He wrote (Commentarius in cel. L. Queletii dissertationem, p. 2, 1876): '*Daedalea quercina* (L.) Fr. est *Daedalea* generis typus, primitus porosa' — Thus *Daedalea* must be typified by *D. quercina*".

It is also interesting to note that Murrill (1904) indicated this species as the type of *Agaricus* and later (1908) as the type of *Daedalea.*

2 — *Daedalea biennis:* The second species indicated as the type of *Daedalea,* by Patouillard (1900), who wrote: "Le type de ce petit groupe est le *D. biennis*".

Imazeki sent us the translation of his treatment of the problem as given in his proper "Genera of *Polyporaceae* of Nippon. 1943", where he expressed the opinion: "As most of the Friesian genera had very heterogeneous contents, there frequently occur many difficult problems when we try to give them a strict definition in the sense of modern taxonomy. As to the genus *Daedalea* Fr., there have been found two main interpretations in defining the type species of the genus. The ones who appointed *D. quercina* as the type are Murrill, Ames, Donk, W. B. Cooke, Bondarzew et Singer, etc...., and others who preferred *D. biennis* are French mycologists, such as Quélet, Patouillard, Bourdot et Galzin. I followed the latter view. The reason is very simple and comprehensible.

"Needless to say, among the many *Daedalea* species, *D. quercina* is the best known species. According to my studies, however, *D. quercina* and its allied species are congeneric with most of *Trametes,* and then, if the type species of *Daedalea* should be established as *D. quercina,* the well-known genus *Trametes,* which includes a great number of species, must be reduced to synonymy with *Daedalea* and many species of *Trametes* must be transferred to *Daedalea* sens. str. By this treatment, there will take place much chaos in terminology. In order to avoid such a confusion, I decided to follow the French treatment".

It is pertinent to note that *D. biennis* is not included by Persoon in *Daedalea* and that Fries (1838) transferred it from this genus to *Polyporus.*

3 — *Daedalea confragosa:* A letter from D. P. Rogers presents may interesting points concerning the matter of typification of *Daedalea:* "Since the name was ascribed by Fries (1821) to Persoon, it is preferable, but by no means obligatory, to seek the lectotype among the species assigned to this genus by both authors. Since Fries retained, in 1821, all of Persoon's species, there are five. A part of the subsequent history of each is as follows:

"*D. gibbosa* (Bull.) Pers. ex Fr.-transferred by Fries to *Trametes,* in Gen. Hym. 11. 1836, and in Epicr. 492. 1838.

"*D. suaveolens* (Bull.) Pers. ex Fr. - redescribed as *Trametes Bulliardi* Fr. in Epicr. 491. 1838.

"*D. angustata* (Sow.) Pers. ex Fr. - Sowerby's pl. 193, the basis for this species was referred to *D. confragosa* by Berk., Outl. Brit. Fung. 254. 1860, but by Fries, Epicr. 587, to an unspecified (asterisk = subspecies?) category under the latter. Neither Persoon, Fries nor Berkeley ever dealt with anything, apparently, but the picture.

"*D. quercina* (L.) Pers. ex Fr. - transferred by Karsten, Bidr. Känned. Finl. Nat. Folk. *37* : 54. 1882 (reference not seen; given in Bidr. Känned. Finl. Nat. Folk. *48* : 309. 1889, and in Bondarzew) to *Lenzites.*

"*D. confragosa* (Bolt.) Pers. ex Fr. - the basis of *Daedaleopsis* Schroet. in Cohn, Krypt.-Fl. Schles. *3*(1): 492. 1888.

"Of these five Persoonian-Friesian species, then, two were removed by Fries to his segregate *Trametes,* one by Schroeter, to be the type of *Daedaleopsis,* one was considered by Karsten to be a *Lenzites,* and one, represented only by a plate, was not subsequently seen by the authors dealing with it. As must often be the case when an attempt is made to arrive at a lectotype on the basis of residues, one answer or another is found according as one consideration or another is given precedence. Since Fries appears to have brought about the first segregation from the genus that he published, it would appear that the removal of *D. gibbosa* and *D. suaveolens* must be accounted as definitive for the present purpose. If *D. angustata* is rejected as least related to the

original concept of *Daedalea,* the choice, if it is to be made from these five, falls between *D. quercina* and *D. confragosa,* probably the best known of the lot. Karsten's removal of *D. quercina* was the earler, and may thus be regarded as leaving no further choice, in which case Schroeter's description of *Daedaleopsis* might be regarded as having no effect (Art. 64(1)). On the other hand, since apparently Karsten never dealt with *D. confragosa* except unknowingly, under another name, his removal of *D. quercina* left the genus, so far as his works are concerned, composed of species not forming part of the genus as originally described, and may be rejected on this account. It might then be considered a more normal procedure to follow Schroeter, who retained *D. quercina* as the original element in *Daedalea* and described his new genus for *D. confragosa.*

"Another way of getting at typification of *Daedalea* is found in the original treatment of the genus. After describing *Daedalea* (S.M. *1* : 331), Fries subdivided it into three tribes (cf. Art. 5, par. 3), *Stipitatae* (p. 332), *Dimidiatae* (p. 333) and *Resupinatus* (p. 340). Neither the first nor the third includes any of Persoon's species of *Daedalea.* This fact does not completely exclude them, nor does the fact Persoon described the genus as "dimidiatus"; but both may be taken into account, and reinforce the effect of Fries' later treatment. When he next fully dealt with *Daedalea,* Fries removed from it all the *Stipitatae (D. maxima* (Brot.) ex Fr. ≡ *Polyporus maximus,* Epicr. 432. 1838; *D. biennis* (Bull.) ex Fr. ≡ P. *biennis,* Epicr. 433, as foreshadowed in Syst. Myc. *1* : 351; *D. brasiliensis* Fr. ≡ *Favolus brasiliensis,* Elench. *1:* 44. 1828; Epicr. 498).

"He removed also two of the three members of *Resupinatus (D. serpens* (Fr.) Fr. ≡ *Trametes serpens,* Hym. Eur. 586. 1874; *D. heteromorpha* Fr. ex Fr. ≡ *Lenzites heteromorpha,* Epicr. 407); the third, *D. latissima* (Fr.) Fr. which he collected but once (Hym. Eur. 589), as to the hymenium, like [*D. serpens*], is rather a *Polyporus,* as set forth in Obs. Myc. [1: 128], according to Fries in Elench. *1:* 71. Therefore the *Dimidiatae* appear more likely to include the type. This second tribe Fries subdivided into three sections of unspecified rank (as earlier in Obs. Myc. *2:* 240. 1818): * *Agaricinae* (p. 333), ** *Genuinae* (p. 335) and *** *Polyporoideae* (p. 337). The *Agaricinae* include *D. quercina* and another species; the *Genuinae, D. confragosa,* etc..., the *Polyporoideae, D. suaveolens, D. gibbosa, D. angustata, etc...* As already noted, Fries in 1838 segregated *D. gibbosa* and *D. suaveolens* to *Trametes* and subordinated *D. angustata* to *D. confragosa.* Again, of the Persoonian species, the choice is narrowed down to *D. quercina* and *D. confragosa,* with one additional consideration, that the former is assigned by Fries to the *Agaricinae* and the latter to the *Genuinae.* So far as can be learned from the material at hand, Patouillard really was the first (Essai 95. 1900) to name a type for *Daedalea* [see Reid's information]; after entering the genus as "*Daedalea* Pers., Synopsis", he gave as its type "*Daedalea biennis* Pers." a species that Persoon did not then or subsequently recognize as a member of the genus (it is *Sistotrema bienne* (Bull.) Pers. Syn. 550, Myc. Eur. *2:* 207. 1825). In view of the fact it cannot typify *Daedalea* Pers., and, in the light of Fries' treatment, is not typical of *Daedalea* Pers. ex Fr., the choice seems not to be binding under Art. 8 and App. IV 4, 4a, 4d. The best procedure may be rather to select a member of *Daedalea* Trib. *Dimidiatae* (Sect.) *Genuinae,* and of the section, the species included in the genus by both Persoon and Fries — *D. confragosa*".

4 — *Daedalea unicolor:* Mentioned as the type of *Daedalea* by Clements & Shear (1931), but previously indicated by Murrill (1908) as the type of the genus *Cerrena.*

5 — *Daedalea maxima:* Indicated as the type species of *Daedalea* by Cooke (1940 and 1953). It has been considered as an ambiguous species or as the same as *Phaeolus schweinitzii* (see Imazeki, 1943).

According to the International Code, the type of a genus must be selected from among the species included in the original description. In a definitive sense, "original description" can only mean "the first valid description". All the species mentioned as the type of *Daedalea* are found in Fries' Systema and for this reason any one could be its type.

The guide to the determination of types is given as Appendix IV of the Code, and item 4e is very clear: "'The first choice of a lectotype should be followed by subsequent workers unless it can be shown that the choice does not fit the original description as well as another of the original elements (specimens, species, higher taxa, etc. . .)".

Initially we agreed entirely with Imazeki that the type of *Daedalea* would be *D. bien-*

nis, because we thought that Patouillard had made the earliest selection of the type. But, later, when we received Reid's and Dennis' information we changed our original idea and recognized that only *D. quercina* could be the type.

According to some authors, Patouillard, Murrill and also Fries were not operating under the present rules, and therefore, their choices or indications of types cannot be considered as invariably binding. Although the conclusions will be the same we do not agree with these authors in this point of view. If the "Systema" was chosen as the starting point, all valid references issued after Fries' work must be respected under the Code, except in the cases limited by special data (Principle VI of the Code).

Now, if *D. quercina* is the type of *Daedalea,* let us look at the consequences.

About the typification of *Lenzites* and *Trametes,* Murrill indicated, respectively as the type of these genera *L. betulina* (L. ex Fr.) Fr. (Murr. 1905, p. 95) and *T. suaveolens* (L. ex Fr.) Fr. (Murr. 1906, p. 637). *L. betulina* (L. ex Fr.) Fr. has been recognized as the type of *Lenzites* by Donk, Clements & Shear, Imazeki, Cunningham, Bondarzew, Overholts and Kotlaba & Pouzar. Cooke (1940, p. 87) indicated *L. applanata* Fr. which, however, is not mentioned in the original publication. The majority of the authors also accepted *T. suaveolens* (L. ex Fr.) Fr. as the type of *Trametes* viz.: Donk, Imazeki, Bondarzew, Overholts, and Kotlaba & Pouzar. Some authors, however, have indicated other species as the type, for instance *T. hispida* Bagl. by Cunningham (1948, p. 2), *T. benzoina* (Wahl.) Fr. by Cooke (1940, p. 88) and *T. pini* (Thore ex Fr.) Fr. by Clements & Shear (1931, p. 347). In Fl. Scand. 1835, Fries did not include any species but later (1836, p. 11) he includes the genus *Trametes* mentioning four species, *Polyporus suaveolens, Daedalea gibbosa, D. elegans* and *D. rubescens,* from among which the type must be chosen. *Polyporus suaveolens* was the first species selected and for this reason it unquestionably becomes its lectotype according to the Code. Therefore, we have in synthesis:

Daedalea Pers. ex Fr., Syst. Myc. *1:* 332—341. 1821.
Type species: *Daedalea quercina* L. ex Fr.

Trametes Fr., Fl. Scand. 339. 1835; Gen. Hymen. 11. 1836.
Type species: *Trametes suaveolens* (L. ex Fr.) Fr.

Lenzites Fr., Gen. Hymen. 10. 1836.
Type species: *Lenzites betulina* (L. ex Fr.) Fr.

Martin, examining Patouillard's choice of *D. biennis* as the type of *Daedalea,* wrote to us "This action may well have been motivated by his conviction that *Daedalea,* as represented by *quercina* and similar species, was not sufficiently distinct from *Lenzites* to be separated generically. That, however, is a taxonomic decision, closely related to, but not identical with, a nomenclatural decision".

Ames (1913, p. 244) accepted in her system of *Polyporaceae* the genera *Coriolus, Daedalea and Trametes,* but made the final observation that these "do not represent distinct natural groups, but only a separation of species for convenience in arrangement".

Donk (1933, p. 135) made the observation [translated from German]: "*Daedalea* is in my opinion not sharply distinguishable from *Trametes* if there is a question of separating the two genera in a key. It is nevertheless possible, that *D. quercina* (at least in Europe) represents a type which one probably may hold distinct from *Trametes,* this in contrast with my original view that both genera must necessarily be united under the name *Daedalea.* There are two reasons why this has not been done here: 1 — the generic limits between *Daedalea* and *Trametes, Fomes* and *Coriolus* have long been more or less uncertain. There will soon be changes in circumscription, so it seems better to follow the prevailing idea and to retain the genus *Daedalea,* even if in a more restricted sense; 2 — the typical species of *Trametes* are in general easy to recognize, even if difficult to characterize and certainly not sharply circumscribed as soon as one also takes into consideration the North American and tropical species".

It is also interesting to note that Donk could not make a real distinction between *Lenzites* and *Daedalea,* because in his key he included under *Lenzites* the remark: "Vergl. auch *Daedalea quercina,* die bisweilen ausgesprochene Lamellen hat".

Pilát (1936, p. 329) and Pinto-Lopes (1952, p. 159) included *D. quercina* in *Trametes* Fr. and mentioned *Daedalea* Pers. ex Fr. and *Lenzites* Fr. as synonyms.

Some authors have tried to make a *"clear"* distinction between *Daedalea, Lenzites* and *Trametes.*

Cunningham (1948, p. 2), for example, gives the key characters:

"Walls of context hyphae hyaline.

Hymenium poroid ..... *(Coriolus).*

Hymenium labyrinthiform or lamellar ..... *Lenzites.*

Walls of skeletal and binding hyphae coloured some shade of brown.

Hymenium poroid ..... *Trametes.*

Hymenium labyrinthiform or lamellar ..... *Daedalea".*

It is not necessary here to make a critical examination of Cunningham's distinctions because our ideas conform with those expressed in Pinto-Lopes' work (1952, p. 143—144).

Bondarzew & Singer (Ann. Mycol. *39:* 60, 63 and 64. 1941) and later Singer (Mycologia, *36*(1): 66—67. 1944) and Bondarzew (1953) cited many genera that are normally included under *Trametes.* They put *Trametes* s. str. in the tribe *Corioleae,* and *Daedalea* and *Lenzites* under *Daedaleae,* and they characterized each taxon in the following manner:

"1 — No cystidia but cystidioles occasionally are present; spores always cylindric, usually slightly curved, in the case of *Hapalopilus* and *Cerrena* they are ellipsoid; cap tissue always leathery to corky with double layers never occurring; forms occur with irpiciform or lenzitoidal hymenophore, however, species with such hymenophore only are rarely listed; no cystidia observed..... ..... Tribe *Corioleae.*

c — Tissue white or pale, clamps as a rule absent.

xx — Spores large, longer than 8 μ, cylindric; odor strong fungus-odor ..... *Trametes* Fr. Type species: *Trametes suaveolens* Fr.

"3 — Cystidia splindle-shaped, usually. thick-walled, occasionally becoming transformed into cystidioles *(G. saepiarium),* hyaline or slightly colored, occasionally with a resinous exudate on top; tissue leathery, less frequently corky, white or colored; spores cylindrical or nearly cylindrical.

b — Hymenophore at maturity always labyrinthoid, less frequently lamellate, but not tubular and not irpiciform; fruit body thin or thick but always thicker than in *Hirchioporus,* of different colors than violet or lilac; spores up to 9 x 3.5 μ and large, ellipsoid-cylindric or cylindric.... Tribe *Daedaleae.*

x — Fruit body more or less thick, wood color or bay, pileus surface bare and uneven, tissue pale colored, up to light rusty red, spores ellipsoid-cylindrical, cystidia present, in pure culture hyphae have clamp (according to Vanin) .... *Daedalea* (Pers.) Fr.

Type species: *Daedalea quercina* L. ex Fr.

xxx — Fruit body rather thin, differently colored; tissue white or cream colored, cap surface rough, with zones; hymenophore clearly lamellate; spores cylindric hyaline, up to 8 μ long ..... *Lenzites* Fr. s. Karst. Type species: *Lenzites betulina* (L. ex Fr.) Fr."

These distinctions of Bondarzew & Singer seem to be somewhat artificial, and we do not agree with them in the following points: 1 — the presence or absence of cystidia or cystioles, in our understanding should be a specific character and not a generic one; 2 — in all of the trametoids the clamps are present in the generative hyphae; 3 — the shape and size of spores, as indicated above, cannot be used as a generic character. The type species of each of the genera in question have spores more or less cylindric, smooth, hyaline and around 8 μ long.

Overholts (Polyp. USA, Alaska & Canada, 31. 1953) interpreted these genera on the basis of the classic distinctions utilized by Fries, and these distinctions are shown in his key to genera:

"6 — Hymenial region daedaloid or verging toward lamellate; sporophore coriaceous to corky but never soft and fleshy; context usually white or light colored .... *Daedalea.*

Hymenium lamellate or, if somewhat daedaloid, then context decidedly brown; always sessile ..... *Lenzites.*

Hymenium poroid or, if verging toward daedaloid, then sporophore soft and watery when fresh; sessile 9

"9 — Tubes not in a distinct stratum but sunken to unequal depths into the context, so that their bases do not from a straight line... *Trametes.*

In the first place, it is important to note that the type of *Lenzites* does not have the

"context decidedly brown" and this is recognized by Overholts in his description of *L. betulina,* which in some cases appears with daedaloid pores and has white context. Those species with brown context, referred to *Lenzites* by Overholts, are more naturally included in *Gloeophyllum* which may also include stipitate species, as for example *L. erubescens.* We must note also that the tubes of all these genera are "not in a distinct stratum but sunken to unequal depths into the context". Therefore, we cannot find any distinction among *Daedalea, Lenzites* and *Trametes* other than those given by Fries:

Daedaloid hymenium ..... *Daedalea.*
Lamellate hymenium ..... *Lenzites.*
Poroid hymenium ..... *Trametes.*

Is the shape of pores a natural or an artificial character? We have in our collection in Brazil, specimens of *Trametes elegans* (Spreng. ex Fr.) Fr. (≡ *L. Palisoti, L. applanata,* etc...) with rounded pores near the point of attachment, daedaloid pores in the middle and lamellate dissepiments around the margin. So, in a single specimen we may have these parts, each belonging to one of three different genera. This variation is not peculiar to this species, but very common in the trametoid group.

Now, if we consider *Daedalea, Lenzites* and *Trametes* as synonyms, *Daedalea* has clear priority under the rules. But, *Daedalea* is not only a name, it is a word that indicates a character, and an artificial one. Therefore, we believe that it would not be in the best interest to make, under *Daedalea,* many new combinations based on trametoid species that may never have daedaloid pores. For this very reason Imazeki (1943) was inclined to follow the French treatment in the selection of the type of *Daedalea.*

Trametes is a well-known genus and is well-delimited with fundamental characters all based on the structure of the trama.

In our view the basic characters are: 1 — context white, whitish or yellowish, never dark brown, homogeneous, never duplex; 2 — hyphal system trimitic; all hyphae hyaline or yellowish; generative hyphae with clamp-connections; 3 — tubes not in a distinct stratum but sunken to unequal depths in the context, so that their bases do not form a straight line.

If *Trametes* is conserved against *Daedalea,* no new combinations will be necessary because all trametoid species have been combined under this genus.

The other question at issue concerns the systematic position of *Boletus biennis* Bull., which is not congeneric with the trametoids.

This species has been designated as the type of other genera:

1 — *Abortiporus* Murr., Bull. Torr. Club *31:* 421. 1904. Type species: *Boletus distortus* Schw.

2 — *Heteroporus* Lázaro in Rev. Real Acad. Cienc. Madrid *15:* 119. 1916; emed. Donk in Rev. Niederl. Homobas. Aphyll. II, 9: 176—179. 1933. Type species: *Boletus biennis* Bull.

The combination *Heteroporus biennis* (Bull. ex Fr.) Lázaro has been used by many authors, including Pilát, Bondarzew & Singer, and Pinto-Lopes.

More recently Singer discovered the priority of *Abortiporus* and changed all combinations that he had published with Bondarzew to *Abortiporus.* In this treatment Singer was then follwed by Bondarzew.

According to many authors the genus *Abortiporus* is based on an abnormal form and is thus to be rejected under Art. 67 of the Code. The specific name indicates that the species was not based on normal specimens, and consequently the availability of *Abortiporus* is really doubtful. For this reason we think that it would be in the best interest to reject this generic name in favour of *Heteroporus* Lázaro em. Donk.

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When was Gymnacranthera Warb. validly published?

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One of the important changes introduced in the nomenclatural procedures by the 1950 Congress is the admission of implicit references to validate a name for a taxon. In order to effect this change the 1950 Congress approved Sprague's proposal to delete the phrase "under another name" from Art. 42(2) of the 1935 Code so that the implicit reference even to pre-Linnean literature under the same name might be admitted. The full effect of the change was explained by Sprague in the example approved by the 1950 Congress. This example as incorporated in Art. 48 of the 1952 Code reads thus:

"The publication of the generic name *Epipogium* R. Br. (Prod. 330, 331: 1810) is validated by Robert Brown's implicit reference to the excellent description of *Epipogium* in J. G. Gmelin, Fl. Sibir. 1: 11 (1747): he attributed the name *Epipogium* to Gmelin.

It must be noted that this decision to change the existing procedures and to validate names by implicit references was voted by the 1950 Congress despite the objections raised against it: cf. Furtado in Gard. Bull. Sin. 10: 162—172 (1938) and 12: 343—346 (1949). And it is also well to repeat here what was stated by me before (1949), that the implicit references admitted in the case of *Epipogium* cannot be understood unless statements made under two separate genera and in two different pages are linked together. From this we then get to know the author of the pre-Linnean genus, Gmelin and not the exact reference, and also that Gmelin's generic name *Epipogium* was incidentally mentioned by Robert Brown in 1810 (the Code usually rejects the names incidentally mentioned).

This decision of the 1950 Congress (incorporated in Art. 48 of 1952 Code) is of great importance since it affects the question of priority of a name or epithet and its typification. Thus in publishing *Gymnacranthera* in his monograph on Myristicaceae (Nova Acta Leop. 68: 1897), Warburg gave the carliest reference in Ber. Pharm. Ges. 2: 227 (1892). However, Stearn who prepared the INDEX NOMINUM GENERICORUM for Myristicaceae overlooks this reference; instead he quotes Warburg, Ber. Deutsch. Bot. Ges. 13: 90, 91, 94 (1896), where the implicit reference appears to be of less value than that of 1892. Perhaps Stearn doubts the value of this reference, for he refers also to Warburg's monograph of 1897. Correspondence shows that some botanists deny *Gymnacranthera* Warb. any valid status in publications prior to 1897.

Yet Warburg, in his report on Myristicaceae published in Ber. Pharm. Ges. 2 (1892), gave the following particulars about the

species which he had transferred to the genus.

"*Gymnacranthera canarica* (King) Warb. wird ..... zu Räucherkerzen, in Südindien (Canara) lokal benuzt and is auch schon in grösseren Quantitäten nach England gekommen, freilich wohl nur als Verfälschung der echten 'Muskat', nicht als 'Ölnuss'."

Obviously the implicit reference here is much better than that of *Epipogium*, for it takes us to the excellent description of *Myristica (Sect.Gymnacranthera) canarica* King published only a year previously in the well-known monographic study on the Asiatic Myristicaceae in the Annals of Roy. Bot. Calcutta (1891), where King had described the new species and redescribed the section *Gymnacranthera* A.D.C. (1844). Admitting the rule of implicit reference as valid, *Gymnacranthera* Warb. and *G. canarica* (King) Warb. should be taken as validly published in 1892.

However in the 1956 edition of the International Code the example of *Epipogium* R. Br. (1810) (incorporated after a special consideration by the 1950 Congress) has been deleted from Art. 39. Does this deletion mean that in future implicit references are not to be admitted, or that the omission was merely an oversight of the editors of the Code?

In view of the previous decision by the Conggress and of the example discussed above, an explicit statement on the status of implicit reference is desirable.

NOMINA CONSERVANDA PROPOSITA

(39) Proposal to conserve the generic name **Hymenolobium** Bentham against *Hymenolobium* Bentham ex Martius (both of the Leguminosae).

Hymenolobium Bentham, Journ. Linn. Soc. 4 (Suppl.): 84. 1860 *(nom. cons. prop.)*.

Type species: *H. nitidum* Bentham, l.c.

This is a genus of at least nine species of trees which are of local importance for the timber they produce and the seeds are a minor food source in some places. Its geographic range is from the Guianas to Rio de Janeiro, but most of the species occur in the Amazon Basin.

Hymenolobium Bentham ex Martius, Flora 20 (beibl. 2): 122. 1837 (*nom. rej. prop.*).

Type species: *H. luteum* (Vellozo) Bentham ex Martius, l.c. (based on *Pterocarpus luteus* Vellozo, Fl. Flum. 301. 1825).

Martius published a manuscript or herbarium name of Bentham's, who apparently either ignored the publication or accidentally overlooked it when he used the name for quite another plant in 1860. No evidence has been found to indicate that the earlier homonym has ever been accepted by anyone since its publication and the name of the type species has universally been considered as a synonym of one or another species of *Platymiscium*. This latter genus was published by Vogel in the same year (Linnaea 11: 198. 1837.) as was *Hymenolobium* Benth. ex Mart.; two species (*P. floribundum* and *P. speciosum)* were described at that time. Bentham (Commentationes de Leguminosarum generibus, 1837, reprinted with change of pagination in Ann. Wien. Mus. Naturg. 2: 104. 1840) transferred Vellozo's *Pterocarpus luteus* to *Platymiscium* as *Pl. luteum* (Vell.) Benth., but later (Fl. Bras. 15(1): 273. 1862.) he treated this combination and that of Martius *(Hymenolobium luteum* (Vell.) Benth. ex Mart.) as synonyms of *Platymiscium nitens* Vogel (Linnaea 11: 417. 1837.) In any event, the type species of the name to be rejected has a perfectly good name under *Platymiscium* to which genus it properly belongs.

Nuttall gave the name *Hymenolobus* to a genus of the Cruciferae (Torrey & Gray, Fl. N. Amer. 1: 117. 1838.) but it is sufficiently distinct orthographically to avoid any confusion. For this reason it is not thought necessary to propose that it be added to the list of nomina rejicienda.

The name proposed for conservation has been adopted in all the major works which include plant genera of South America: Bentham in Martius Fl. Bras. 15(1): 274. Jan. 1862; Bentham & Hooker, Gen. Pl. 1: 548. Oct. 1865; Baillon, Hist. Pl. 2: 329. 1870; Taubert in Engler & Prantl, Nat. Pflanzenfam. 3(3): 342. 1894; Ducke, Arch. Bot. Rio de Jan. 1: 36. 1915 (cf. also Trop. Woods 47: 1—7. Sept. 1936); Amshoff in Pulle, Fl. Suriname 2(2): 139. 1939; Record & Hess, Timbers of the New World, p. 282. 1943; Pittier, Cat. Fl. Venez. 1: 398. 1945.

No other name appears to have been given to the genus; to avoid the necessity of creating a new name and the resultant new combinations, conservation seems desirable and is hereby proposed.

Proposed by: Richard S. Cowan, U.S. National Museum, Smithsonian Institution, Washington 25, D. C.

(40) Proposal for the conservation of the generic name **Agalinis** Rafinesque, New Fl. N. Amer. 2: 61 (1837) versus *Chytra* Gaertn. f., Fruct. et Sem. Plant. 3: 184, t. 214 (1805) (both of the Scrophulariaceae).

Agalinis Raf. (Scrophulariaceae): *nom. cons. prop.*

Adopted by: Britt. et Brown, Ill. Fl. N. U.S. 3: 208 (1913); Pennell, Bull. Torr. Bot. Club 40: 125 (1913) and Proc. Acad. Nat. Sci. Philadelphia 81: 111 (1929); Small, Fl. Miami 167 (1913) and Man. S.E. Fl. 1216 (1933); Blake, Rhodora 20: 70 (1918); Britt. et Millsp., Bahama Fl. 392 (1920); Rydberg, Fl. Rocky Mtns. and Adjac. Pl. 785 (1922) and Fl. Prairies and Plains Cent. N. Amer. 721 (1932).

Type species: *Agalinis palustris* Raf.

Chytra Gaertn. f. (Scrophulariaceae): *nom. rej. prop.*

Adopted by: no one, as a generic name, since its publication.

Type species: *Chytra anomala* Gaertn. f.

Comment: The name *Gerardia* L., long misapplied to a genus of Scrophulariaceae, has been clearly shown to apply correctly to *Stenandrium* Nees of the Acanthaceae. The conservation of *Stenandrium* over *Gerardia* has been proposed to avoid numerous nomenclatorial changes that would result if the earlier name were adopted (Taxon 5(3): 58. 1956). We must now decide what name to apply to the scrophulariaceous taxon that will, for the present, be called "Gerardia". This decision is somewhat complicated by the fact that there are two interpretations of "Gerardia". The first, which we may term "Gerardia" *sensu lato,* is that held by Bentham (Comp. Bot. Mag. 1: 204. 1835), Bentham and Hooker (Gen. Plant. 2: 972. 1876), Wettstein (Nat. Pflanzenf. 4. 3b: 92. 1891), Gray (Man. of Bot. ed. 5. 334. 1878), and Fernald (Gray's Man. of Bot. ed. 8. 1285. 1950). These include in "Gerardia" taxa such as *Virgularia* Ruiz et Pavon, *Tomanthera* Raf., and *Aureolaria* Raf. For those who would interpret "Gerardia" in the broad sense the earliest available name is now *Virgularia* Ruiz et Pavon (Fl. Peruv. et Chil. Prodr. 92. 1794).

We are here concerned with the second interpretation of "Gerardia", "Gerardia" *sensu stricto,* that restricts the genus to those purple- or pink-flowered, narrow-leaved plants that comprise the *Eugerardia* of Bentham, and that recognizes *Virgularia, Aureolaria,* and *Tomanthera* as valid genera. Proponents here include Pennell (Bull. Torr. Bot. Club. 40: 125. 1913 and Monogr. Acad. Nat. Sci. Philadelphia 1: 419. 1935), Britton and Brown (Ill. Fl. N. U.S. 3: 208. 1913), Small (Man. S.E. Fl. 1216. 1933), and Gleason (New Britt. and Brown Ill. Fl. N. U.S. 3: 242. 1952). For "Gerardia" *sensu stricto* the earliest available name is *Chytra* Gaertn. f. Although Gaertner's illustration and description seem without reasonable doubt to apply to the plant at present called *Gerardia tenuifolia* Vahl or *Agalinis tenuifolia* (Vahl) Raf. *(vide* Pennell, Monogr. Acad. Nat. Sci. Philadelphia 1: 420. 1935), the identity of *Chytra* has not always been so certain. For example, Bentham and Hooker included *Chytra* in synonymy under *Buchnera* (Gen. Plant. 2: 968. 1876), as did Wettstein (Nat. Pflanzenf. 4. 3b: 94. 1891) and Dalla Torre and Harms (Gen. Siphon. 462. 1904). The only species name under *Chytra* is the original one of Gaertner, *C. anomala.* Therefore, if *Chytra* be used for "Gerardia" *sensu stricto* some 60 nomenclatorial changes will be necessary.

The next name applicable to "Gerardia" *sensu stricto* is *Agalinis* of Rafinesque. Under the name *Agalinis* 37 species of this taxon were recognized by Pennell in his monograph of the North American representatives (Proc. Acad. Nat. Sci. Philadelphia 81: 111—242. 1929). *Agalinis* has also been used in a number of other publications, some of which are cited above. For "Gerardia" *sensu stricto* it would be well to conserve *Agalinis* Raf. over *Chytra* Gaertn. f. to avoid the host of name changes that would result if the latter name were to be adopted. If *Agalinis* be conserved, appreciably fewer name changes will be called for, and these principally for those species proposed since or not included in the range of Pennell's monograph. If this proposal be adopted, we can avoid adding to the already overburdened synonymy borne by the "Gerardias".

Proposed by: John W. Thieret, Chicago Natural History Museum, Chicago, Illinois.

(41) Proposal to conserve the generic name **Bartsia** Linnaeus (Sp. Pl. 602) emend. Bentham (in DC., Prodr. 10: 544. 1846) against *Bartsia* Linnaeus 1753 (both of the *Scrophulariaceae).*

Most botanists realize that a great deal of spade-work is still necessary before we reach the nomenclatural stability that is the ultimate aim of the International Rules. But must the spade be used for digging up difficulties? Writing as a botanist who, without being primarily a taxonomist, would like to use as correct a nomenclature as possible, I plead, that, where the Rules allow us, we should take the importance of nomenclatural stability into consideration. These days one frequently gets the impression that taxonomy is becoming more related to philology than to botany.

Stability in nomenclature is so important to all those of us whose main field of interest lies in phytogeography, ecology or applied botany, that some of the more subtle philological intricacies — however interesting — should be sacrificed for its sake. We all know that physiologists and geneticists have in the past committed regrettable taxonomic and nomenclatural errors. We do not induce them to improve their ways by presenting to them a philological circus.

The reason for my appeal is Thieret's proposal in Taxon vol. 7 (3) p. 83 with its consequence that *Bartsia* should be replaced by *Alicosta* Dulac.*) I have no objection to Thieret's main proposal, viz. that *Castilleja* Mutis ex L. f. should be conserved over *Bartsia* L. The reason given l.c.: "in order to avoid perhaps 200 name changes" seems a very wise one.

Nevertheless to discontinue a more than century-old practice in order to conform with rules of perfection, and thus to cause a completely unnecessary change of some 50 other names seems equally unwise. Furthermore, in counting the number of name-changes one should also take into account how much the individual names are used. The name of an endemic known to half a dozen specialists does not carry the same weight as the name of a plant which is more or less a household word for a large number of botanists. That is the case with at least one of the name-changes involved here.

With regard to the arguments put forward by Thieret (l.c.), I formally propose that *Bartsia* L. (1753), emend. Bentham 1846 be conserved and that the type of the conserved genus be *B. alpina* L.:

Nom. cons. prop.: Bartsia Linnaeus, Sp. Pl. 602. 1753, emend. Bentham in A.P. Decandolle, Prodromus 10: 544. 1846.

T.: *B. alpina* Linnaeus (vide Bentham l.c.)

Nom. rej. prop.: Bartsia Linnaeus, Sp. Pl. 602. 1753.

T.: *B. coccinea* Linnaeus (vide Pennell, Proc. Acad. Nat. Sci. Philadelphia 82: 14—15. 1930).

Proposed by: K. Faegri, Bergen, Norway.

(42) Proposal to conserve the generic name **Rourea** Aublet against *Kalawael* Adanson, *(Connaraceae).*

The proposal to conserve *Rourea* Aubl. against *Kalawael* Adans. needs some comment and entails its typification.

In 1717 Hermann, in his 'Museum Zeylanicum', gave some notes on two different plants from Ceylon, both recorded by their vernacular names, Kalawael (l.c. p. 21 & 24) and Kiridiwael (l.c. p. 10). As appears from his specimens preserved in the British Museum (the first named also in Herb. Leyden) Kalawael = Derris heptaphylla (L.) Merr. and Kiridiwael = Rourea minor (Gaertn.) Leenh.

In 1747 Linné described in his 'Flora Zeylanica', in the class Decandria, the genus Santaloides L. in which by citation he included both Kalawael and Kiridiwael. From his description and from the systematic position he gave to his genus it is clear that he based it on Kiridiwael, of which he obviously must have seen the Hermann specimen. The mention of "styli duo" in his diagnosis must be a mistake, as it does not fit either of the two Hermann species. It is thus inferred, that Santaloides L. 1747 should be typified by Kiridiwael, that is Rourea,

---

*) Note by editor:

Alicosta Dulac is an illegitimate superfluous name. It was substituted for *Bartsia* L. not because Dulac excluded Linnaeus' type but because he objected to generic names derived from people's names. Although he does not include *Bartsia coccinea* under *Alicosta,* that is simply because it does not occur in the Hautes-Pyrenées and not because he is segregating *Alicosta* from the type element of *Bartsia.*

and in this sense it has always been understood. It is most remarkable that Linné did not refer to it in his later works.

In 1763 Adanson described in his 'Familles des Plantes' (vol. 2, p. 344) the genus Kalawael in his family Pistaciae. He based himself exclusively on the description of Linné 1747 repeating the mistake alluded to above "2 stil. 2 stig.". He provided the generic name Kalawael with the references: "Herm. Zeyl. 24. Santaloides Linn.", adding, in the index (l.c. p. 530) "Kiridivel" as another synonym, thereby maintaining exactly the same citation and circumscription as Linné had cited in 1747 for Santaloides.

Though Adanson accepted the name Kalawael, a common Ceylonese vernacular for Derris, it is clear that the typification of Kalawael Adans. should be in accordance with the taxonomical position he gave to it, and with his diagnosis; the latter which he derived from Linné should in turn be typified in the same sense as Santaloides L., that is by Kiridiwael Herm. = Rourea minor (Gaertn.) Leenh. The conclusion is, therefore, that Kalawael Adans. 1763 is an earlier taxonomic synonym of Rourea Aubl. 1775.

The arguments for proposing the rejection of Kalawael in favour of Rourea are primarily that no taxonomist has taken up this name since it was proposed by Adanson in 1763 and no binary combination has been attached to it, whereas Rourea is a well-known and large genus. A minor issue is that the name Kalawael is a common vernacular in Ceylon for Derris.

The proposal for the conservation of Rourea Aubl. should read:

Nom. gen. cons. prop.: *Rourea* Aublet, Pl. Guiane 1: 467. *t. 187.* 1775.
T: *R. frutescens* Aublet.

Nom. gen. rej. prop.: *Kalawael* Adanson, Fam. 2: 344. 1763.

The proposal should be considered in conjunction with no. (11) by Hemsley & Bullock (Taxon 5: 57. 1956) who have proposed the conservation of Santaloides Schellenb. against Santalodes O.K. The two proposals do not interfere as it is a taxonomical question whether Santaloides is accepted as a distinct genus as Hemsley considers, or whether it should be included in Rourea sens. lat., which is my opinion. In any event Kalawael Adans. should also be rejected against Santaloides Schellenb.

Proposed by: P. Leenhouts, Rijksherbarium, Leiden.

NEWS AND NOTES

THE SLOANE HERBARIUM

The Sloane Herbarium, an annotated list of the *Horti Sicci* composing it; with biographical accounts of the principal contributors. Based on records compiled by the late James Britten, with an introduction by Spencer Savage - Revised and edited by J. E. DANDY.

London, printed by order of the Trustees of the British Museum - Issued: 7th April 1958 - £ 7.7.—.

"The classic herbarium accumulated by Sir Hans Sloane and now preserved in the Department of Botany at the British Museum (Natural History) is probably the most extensive single series of botanical collections made in the seventeenth and early eighteenth centuries; yet the importance of its contents in the study of botanical history and taxonomy has not been generally appreciated." With these words, Mr. J. E. Dandy, keeper of Botany at the British Museum (Natural History) introduces in the Preface his 'Sloane Catalogue'. Apart from this Preface, the Introduction by Spencer Savage, and a short note by the late James Britten on Sloane and his herbarium, the book consists mainly of an annotated list of the Horti Sicci composing the Sloane Herbarium, of biographical accounts of contributors and of facsimiles of handwritings. Indexes to geographical localities and to botanical names are provided.

In his list of *Horti Sicci* Mr. Dandy enumerates the 334 separate collections composing the Sloane Herbarium. The collections are cited by the elaborate titles given by Dr. M. Maty in 1757 and, if necessary, synopses of additional contributors to each of them are given.

The biographical accounts of contributors are very detailed and precise and contain a wealth of information on seventeenth and eighteenth century botany. References are given to the Horti Sicci which contain specimens collected by the contributors.

A splendid collection of 96 facsimiles of handwritings is given at the end of the book.

There can be no doubt that this publication is a very important contribution to our knowledge of these historic collections. It will greatly facilitate future research on old types and names. Mr. Dandy is to be congratulated upon his effort and also upon the fine way in which his book has been printed and edited.

F. A. Stafleu.

FIFTEENTH INTERNATIONAL HORTICULTURAL CONGRESS

Resolutions

The XVth International Horticultural Congress held at Nice in April 1958 adopted *inter al.* the following resolutions recommended by the International Committee on Horticultural Nomenclature and Registration:

1) The Committee recommends to the Congress the adoption for Horticulture of the 1958 Edition of the International Code for the Nomenclature of Cultivated Plants, and at the same time, expresses the hope that the International Commission for the Nomenclature of Cultivated Plants will consider, as soon as possible, the various proposals for the improvement of the Code that have been drawn to the attention of the Committee during the Congress at Nice.

2) The XVth International Horticultural Congress assembled at Nice, being convinced that the stability of the specific names of cultivated plants is of the highest importance for the progress of both applied and pure botany, and being gravely disturbed by the continued changes in the specific names of widely grown horticultural plants, urges the IXth International Botanical Congress, due to meet in Montreal in 1959, to make any appropriate emendations to the International Code for Botanical Nomenclature that will reduce to a minimum the changing of such names for nomenclatural reasons in the future.

MISSOURI BOTANICAL GARDEN

The fifth annual symposium on systematics will be held at the Missouri Botanical Garden on Friday and Saturday, October 24 and 25. The subject of this year's symposium will be "Taxonomic Consequences of Man's Activities". The symposium will be led by Dr. Edgar Anderson, Missouri Botanical Garden, and Dr. Robert L. Usinger, University of California, Berkeley. Five invited papers on different aspects of the problem as it relates to botanical and zoological systematics will be given by Dr. F. R. Fosberg, Pacific Vegetation Project; Dr. Robert R. Miller, University of Michigan; Dr. H. H. Ross, Illinois Natural History Survey; Dr. Jonathan Sauer, University of Wisconsin; and Dr. G. Ledyard Stebbins, University of California, Davis. The symposium is aided by a grant from the National Science Foundation.

TYPIFICATION OF NOTHOFAGUS Bl.

Because of the proposed conservation of Nothofagus (Taxon 2: 177) it appears necessary to have it typified. When describing the genus, Blume did not give specific epithets under Nothofagus for the 4 species of Fagus which he referred to it (Mus. Bot. Lugd. Bat. 1: 307. 1850). Oersted made 12 simultaneous transfers. In my revision (Journ. Arn. Arb. vol. 34. 1953) I have only typified the two sections, and it appears satisfactory to indicate Nothofagus betuloides (Mirb.) Oerst., the type of sect. Calusparassus (Hombr.) Krasser as the type of the genus. Fagus betuloides Mirb. was among the original elements included in Blume's generic description. This section should consequently be called Sect. Nothofagus in future.

C. G. G. J. van Steenis.

WHERE ARE THE GISEKE & MURRAY HERBARIA?

Throughout the herbarium at Edinburgh there is a considerable number of 18th century specimens whose origins are comparatively unknown. Dating from about 1760 to 1790, the majority of them have some Germanic connection. In particular, there are reasons (from places and dates on the labels but not names) for thinking that three botanists are chiefly involved - Giseke, A. Murray and J. A. Murray.

Paul D. Giseke, reputedly a favourite pupil of Linnaeus, was professor of Physics (and Poetry!) at Hamburg (after studying at Göttingen) from 1771—1796. Some of the South African specimens which may have

belonged to his herbarium, bear a marked resemblance to those in the Linnaean herbarium, suggesting that they came from a common source. Therefore, although Giseke described few new species himself, his collection is of more than purely historic interest.

Adolf Murray, who spent much of his life at Uppsala where he was Professor of Anatomy, was another intimate of Linnaeus. It seems very probable that certain specimens here did belong to his private collection. Dr. Uggla has informed us that there is a large collection at Eriksberg, Sweden, which he believes is that of Adolf Murray.

Johann Andreas Murray, brother to Adolf Murray, and like him a German of Scottish ancestry, was the Director of the Göttingen Botanic Garden from 1769—1791. Although there is a considerable number of specimens which might be his, there is unfortunately no evidence that his many types are at Edinburgh.

On many of the labels, especially the putative Giseke sheets, the names of many of the mid-late 18th century botanists occur as donors — names such as Büttner, Bueck, Bäck, Abendroth, Erxleben, Bergius, Spielmann, Thunberg, Jussieu, Jacquin and Osbeck. Although Linnaeus' name occurs on several labels in 'Giseke's' (sic) hand, only one genuine Linnaean specimen has come to light — Commelina papilionacea.

Despite enquiries and helpful replies from the herbaria at Hamburg, Göttingen and Uppsala, it has not been possible to conclude with any degree of certainty that these specimens do in fact form part of Giseke's and the two Murrays' herbaria. Any information on the whereabouts of these collections or authentic examples from them would be of the greatest assistance and most welcome.

I. C. HEDGE.

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. KRAMER, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Madagascar

A. CAVACO & M. KERAUDREN: Flore de Madagascar et des Comores. 78. Annonacées. (109 pp., 24 figs.). Paris, 1958.

Orchids of Peru

CH. SCHWEINFURTH: Orchids of Peru. (With keys, descriptions, enumerations of specimens, 45 figs., 1 map; the first part, dealing with 26 out of ca. 120 genera, but including a key to all genera). Publ. as Vol. 30(1): pp. 1—260 (1958) of Fieldiana: Botany; Chicago, 1958.

Spring Flora of North Central Texas

L. H. SHINNERS: Spring Flora of the Dallas — Fort Worth Area, Texas. (A guide to all wild and many cultivated plants found within 50 miles of the two cities and flowering from January to early June. With keys, concise descriptions (sometimes confined to the keys), data on habitat and range; v + 514 pp., 11 plates with line-drawings, one map; offset-print). Publ. by the author, S.M.U. Box 473, Dallas 5, Texas, 1958. (Price $ 4.75; available with tape or spiral binding).

Flora of Belgium

Flore Générale de Belgique. Bryophytes I (III), by C. VAN DEN BERGHEN *(Hepaticae)*. (pp. 271—389, figs. 86—125). Bruxelles, 1957.

Flora of European Russia

S. S. STANKOV & V. I. TALIJEV: Opredjelitel' vysšich rastenij jevropskoj časti SSSR (Key for the identification of the higher plants of the European part of the U.S.S.R.). (An enumeration of all vascular plants with keys, very concise data on habitat and distribution, and 645 ill.; 740 pp.). "Sovjetskaja Nauka", Moscou, 1957.

Cactaceae

C. BACKEBERG: Die *Cactaceae* - Handbuch der Kakteenkunde, Vol. I. (Einleitung und Beschreibung der *Peireskioideae* und *Opuntioideae*). (xvi + 638 pp., 618 + 35 figs.; first of 5 volumes with keys to and descriptions of all species and varieties). Gustav Fischer Verlag, Jena, Germany.

* * *

Monographs, Revisions, etc., published in periodicals

G. CUFODONTIS: Enumeratio plantarum Aethiopiae. *Spermatophyta* (Seq.). Bull. Jard. Bot. Brux. 28 (1), suppl.: 441—488 (1958). *(Euphorbiaceae* to *Icacinaceae)*.

H. H. ILTIS: Studies in the *Capparidaceae*. — IV. *Polanisia* Raf. Brittonia 10 (2): 33—58 (1958). (With keys, descriptions, illustrations, diagrams, and maps).

R. W. J. KEAY: *Randia* and *Gardenia* in West Africa. Bull. Jard. Bot. Brux. 28 (1): 15—72 (1958). (With keys to all genera previously included in the two above-named, and illustrations).

C. V. MORTON: Observations on cultivated ferns, V. The species and forms of *Nephrolepis*. Am. Fern Jo. 48 (1): 18—27 (1958). (With key to the species and cultivars).

S. J. VAN OOSTSTROOM & Th. J. REICHGELT: Het geslacht *Medicago* in Nederland en België. Acta Bot. Neerl. 7: 90—123 (1958). (With key, descriptions, and illustrations of pods; in Dutch).

E. PETIT: Les *Naucleeae* (*Rubiaceae*) du Congo Belge et du Ruanda-Urundi. — 2. *Mitragyna* et *Nauclea*. Bull. Jard. Bot. Brux. 28 (1): 1—13 (1958). (An enumeration of species, with keys).

J. SOJÁK: Klič k určení plodů našich Cyperaceí (excl. *Carex)* [Schlüssel zur Bestimmung der Früchte der tschechoslowakischen Cyperaceen (excl. *Carex*)]. Preslia 30(1): 43—58 (1958). (In Czech; with illustrations).

G. L. WEBSTER: A monographic study of the West Indian species of *Phyllanthus*. Jo. Arnold Arbor. 37: 91—122, 217—256 (1956); 38: 51—80, 170—198, 295—373; 39: 49—100 (1957), 111—212 (1958). (With keys, descriptions, maps, illustrations, and enumerations of specimens).

D. P. YOUNG: *Oxalis* in the British Isles. Watsonia 4 (2): 51—69 (1958). (With key and descriptions).

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the life sciences is September 15, 1958. Proposals received prior to that date will be reviewed at the Fall meetings of the Foundation's Advisory Panels and disposition will be made approximately four months following the closing date. Proposals received after the September 15, 1958, closing date will be reviewed following the Winter closing date of January 15, 1959.

Inquiries should be addressed to the National Science Foundation, Washington 25, D. C.

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NOMENCLATURE PROPOSALS FOR THE MONTREAL CONGRESS

I. PROPOSALS BY F. R. FOSBERG (Falls Church, Va.)

Careful study of the new Paris Code shows that despite all the thoughtful debate before and during the Paris Congress, and despite the careful work of the Editorial Committee, the wording of some provisions leaves something to be desired. Also there still seem to be several unworkable articles that can cause nothing but perpetual difference of opinion and instability (Arts. 65, 66, 67). The following proposals are offered toward removing these imperfections.

23. *Article 4*: In this article no direct provision is made for any rank above that of *Divisio* except that of *Regnum Vegetabile*. Yet Recommendation 16A speaks of divisions of Fungi, and mentions Algae, also presumably above the rank of *Divisio*, since the name does not end in *-phyta*. These names evidently have no status under the code, yet they are used in it. This curious inconsistency could be remedied by adding a rank termed subkingdom, with names which are plural substantives. Thus there might be, according to some classifications, four subkingdoms, viz. Bacteria, Algae, Fungi, and Archegoniatae.

To correct this deficiency the following is proposed: To Article 4 add "*Subregnum*" after *Regnum Vegetabile*. In Recommendation 16A change "(a)" to "(b)", change "(b)" to "(c)". Add at the beginning "(a). The name of a subkingdom is a substantive with a nominative plural ending."

24. *Recommendation 4A*: The way this recommendation is stated could be interpreted as directing the author as to taxonomy, rather than only as to nomenclature. To correct this it is proposed to change, in line 3, "should" to "may."

25. *Article 5*: If an exception to this article is to be made for Fries' "tribes" which were thus published as infra-generic taxa it should be made clear just what their modern status is. Surely they cannot remain tribes.

26. *Article 7 Note 3*: Again we have managed to get an unhappy wording for this note, viz. the part "unless its name must already be rejected under this Code." When the proposal was made to substitute "may" for "must" in the equivalent note in the Stockholm Code, and adopted at Paris, there was no intention to prohibit typification of any illegitimate names, but only to make this optional. As this note stands, it is not permitted to choose lectotypes.

To eliminate this inconsistency and to make possible the typification of names that are illegitimate (though not to require this if it is undesirable or impossible) I propose deleting the clause "unless its name must already be rejected under this Code" from Note 3.

COMMONWEALTH MYCOLOGICAL INSTITUTE
22 AUG 1958
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27. *Article 14 Note 3*: This note is not well worded, as it has been interpreted by some to mean that any name that would displace a *nomen conservandum* whether or not it is based on the same type, is rejected. That this could not really be the intent is shown by the last sentence. Any displacement of a later name by an earlier one based on a different type is, from the standpoint of nomenclature, a matter of "union with another taxon." Therefore, no name based on another type could be automatically rejected just because someone thought the two taxa were the same.

The ambiguity of this note can be remedied very simply by the following proposal: It it proposed that the words "of corresponding rank based on the same type" be substituted for "for the same taxon."

Actually it is only if they are based on the same type that we can be certain that the names are for the same taxon.

28. *Recommendation 29A*: It is proposed to change the first line from "Authors are urged scrupulously to avoid publishing . . ." to "Authors are urged to scrupulously avoid publishing . . ." in the interests of clear English, even though this involves a split infinitive. Another possibly preferable way of saying it might be ". . . to avoid scrupulously the publishing . . ."

29. *Recommendation 41A*: There seems no logical reason why this obvious recommendation should be applied only to combined generic and specific descriptions. It is equally important that any description of a genus (or a species, or any other taxon) mention the points in which it differs from its allies.

30. Therefore it is proposed that the wording of this recommendation be changed to "A description of any new taxon should mention the points in which the taxon differs from its allies."

31. *Article 44*: One can only approve of this provision, but it may be asked what we are to do with names published before 1 Jan. 1953 without clear indication of rank.

32. *Article 45*: The expression "For purposes of priority" has always been a confusing one. To mitigate this in some measure it is proposed to add a sentence to the first paragraph on page 45 as follows: "However, validly published earlier homonyms, whether legitimate or not shall cause rejection of their later homonyms (unless these are conserved)."

33. *Recommendation 46B*: Add to paragraph 1: "In such cases the name of the author who supplied the description is the most important and should be retained when it is desirable to abbreviate such a citation."

34. *Article 63*: It is proposed to simplify this article to "A name must be rejected if it is illegitimate." There seems to be no reason for the detailing of special cases because if Articles 65, 66 and 67 are retained they should be made objective and workable, in which case names to which they apply will be illegitimate. If the application of these articles remains subjective, as at present, they wil always be a far worse source of instability than the ills that they try to remedy.

8. *Article 65*: St. John's (Taxon 6: 198) statement of the case against this article could hardly be improved upon.

35. *Article 66*: This article, even in its present form, is useless. It is difficult to see how a name can be used if it is impossible to select a satisfactory type. One would not know what plant to apply it to. Therefore the article can do nothing but cause confusion and enable students to debate as to its meaning and to reflect on the fallibility of those who make rules.

Therefore it is suggested that this article be deleted and that the cases it purports to settle be dealt with by proper typification.

36. *Article 67*: This article is likewise useless, subjective, and productive of instability and confusion. No one has yet been able to give a satisfactory objective definition of a monstrosity. If one can demonstrate that a given type specimen represents an abnormal form of a known species, the name based on this specimen automatically becomes a synonym. If the species has no earlier legitimate name, then the name in question may be used. If it is impossible to tell to what species the "monstrosity" belongs, then the name goes out of use because it only applies to its type specimen. It is proposed that this article be deleted on the grounds that a monstrosity cannot be defined objectively.

37. *Article 73*: It is proposed to add "geographic or vernacular" after "personal" in Note 5, as the privilege of latinizing these in a different form than their common usage has been exercised probably as frequently as with personal names.

II. A PROPOSED REVISION OF ARTICLE 15

H. W. Rickett (New York) and A. C. Smith (Washington)

Article 15 is presently worded: "When a name proposed for conservation has been provisionally approved by the General Committee, botanists are authorized to retain it pending the decision of a later International Botanical Congress."

Actually this Article does not describe current practice very effectively, since the impression seems to exist in some quarters that conservation has been "provisionally approved" when a proposal for conservation is published in Taxon. By authorizing such publication the General Committee by no means provisionally approves the suggested conservation. Such conservation can be effected only by action of a plenary session of an International Botanical Congress, as specified in Division III, Provision 1, of the Code. It may clarify the situation to describe existing procedure:

(1) the author sends his proposal to the rapporteur, and it is published in Taxon; (2) by this publication the proposal is brought to the attention of the General Committee; (3) the proposal, with advance agreement by the General Committee, is automatically referred to the appropriate study committee; (4) after study of the case, this special committee publishes its report in Taxon; (5) the General Committee studies this report and any collateral information sent to it, reaches a decision on each proposal by a mail ballot, and prepares a recommendation for the next International Congress; (6) the next Congress at a plenary session affirms or rejects the recommendation of the General Committee; (7) the *nomen conservandum propositum*, if all decisions up to this point are affirmative, is listed in the next edition of the Code and becomes a part of that document.

The misunderstanding has been caused by the fact that each name proposed for conservation comes before the General Committee twice. Only on the second occasion (item 5 above) does the General Committee "provisionally approve" such a name, and only at this point are botanists authorized to retain it. The conservation does not finally go into effect until the action described under item 6 above.

The intent of Article 15 is doubtless to encourage existing usage, as far as possible, until the General Committee has acted favorably on an affirmative recommendation by the appropriate study committee. Of course "existing usage" is difficult to define, but most botanists will take such a phrase to encourage restraint in forming new combinations on the assumption that the proposal will ultimately be accepted by a Congress. All too frequently new binomials are proposed on the basis of a *nomen conservandum propositum* that does not survive the scrutiny of the appropriate study committee.

In view of these considerations, it is suggested that the Article in question be reworded as follows and accompanied by a new recommendation:

38. *Article 15*: When a name proposed for conservation has been approved by the General Committee after study by the Committee for the taxonomic group concerned, botanists are authorized to retain it pending the decision of a later International Botanical Congress.

39. *Recommendation 15A*: When a name proposed for conservation has been referred to the appropriate committee for study, botanists should follow existing usage as far as possible pending approval by the General Committee.

III. PROPOSALS BY E. T. WHERRY (Philadelphia)

In the 1952 edition of the International Code, page 22, the widely accepted principle that a given noun should not be used for more than one concept was flouted by article 32: "The subgenus containing the type species of a generic name must bear that name unaltered." In the 1956 edition this article, now No. 22, was emended by the addition of the words "or section," and rephrased.

The difficulty of reading subsequently published taxonomic articles has been materially increased by the following of this plan, in that each time a technical name of the sort usually applied to a genus is used in discussions, keys, indexes, etc., one has to think back or look back to ascertain what category is meant. The result is contrary to the aim stated in the 1956 Preamble, p. 11, "avoiding and rejecting the use of names which may cause error or ambiguity . . ."

As there must be some merit in this tautonymous procedure, or it would not have been introduced, no proposal is here made to alter the article itself. There is, however, a well-known case in which a Recommendation wisely permits choice on the part of a writer, Rec. 82 G in 1952, 73 F in 1956 "authors desiring to use capital initial letters may do so when . . ." Correspondingly, it is here proposed that a Recommendation 22 C be introduced into the next edition of the Code:

40. *Recommendation 22C*: Authors desiring to distinguish clearly between the name of a genus and that of a type-including subdivision thereof may prefix to the name of the latter the Greek character α; this is not to be regarded as the creation of a new name.

For many years the International Botanical Codes have forbidden tautonymy, explicitly between a genus name and the associated species epithet, and implicitly between the latter and that of any lesser category. The 1952 and 1956 Codes, however, while continuing to hold that species epithets are illegitimate "when they exactly repeat the generic name," inconsistently require that a subdivisional epithet of a type-including taxon must repeat the epithet of the next higher taxon unaltered. (Art. 35 in 1952, Art. 26 in 1956).

This plan having proved to render difficult the reading of taxonomic articles in which extensive species-subdivision is carried out, a Recommendation is again proposed; this is actually merely a modification of the plan wisely used by Linnaeus and many subsequent workers, of calling the typical variety the α-one.

41. *Recommendation 26A*: When it is desired to make evident that a given epithet refers to a type-including subdivision rather than to a species, the Greek character α may be prefixed to that epithet. This is not to be regarded as the creation of a new epithet any more than is the change from initial small to capital letters permitted by Recommendation 73 F.

IV. REJECTION OF SYNONYMS

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

In his review of nomenclatural conservation (Taxon 5: 85-95), Stafleu calls attention (p. 89, 90) to difficulties in interpreting Article 14 note 3 of the Code. In the study of names currently proposed for conservation, the problem of applying this note has several times been encountered by the Committee for Spermatophyta. The note reads: "A conserved name is conserved against all other names for the taxon, whether these are cited in the corresponding list of rejected names or not, so long as the taxon concerned is not united with another one bearing a legitimate name".

It is not clear in the present note what is meant by 'all other names for the taxon'. It may be maintained that the note refers only to all other names based on the same type (nomenclatural synonyms). This, indeed, is the attitude of some of those who are now interpreting the note. However, as Stafleu has already pointed out this is to ignore the historical development of conservation. Before the Cambridge Congress (i.e. before the adoption of the type-method) the intention was to conserve a name not only against all nomenclatural synonyms but also against all taxonomic synonyms, whether listed or not, that fell within the circumscription for which the name was conserved. The present note 3 is therefore an example of the persistence in the Code of the old method of defining names by circumscription rather than by types. Obviously this is an impossible provision under the type method. The status of taxonomic synonyms of a conserved name that are not listed as nomina rejicienda is precisely the present difficulty.

The only solution that is in accordance with the type method is to list all taxonomic synonyms of a conserved name as nomina rejicienda. When, in the event of taxonomic emendation, the conserved name competes with names based on different types but not listed as nomina rejicienda, then the principle of priority must apply. (See e.g. the Weihea-Cassipourea example in the Code).

When a hitherto unknown synonym of a conserved name is discovered it should at once be considered for rejection, especially when it is unlikely that it would ever qualify as the name of a combined genus.

We therefore propose the following rewording of Article 14 notes 3 and 4.

42. *Article 14 Note 3*: A conserved name is conserved against all other names in the same rank for the same type (nomenclatural synonyms) whether these are cited in the corresponding list of rejected names or not, and against those names based on different types that are cited in that list.

When a conserved name competes with one or more other names based on different types and against which it is not explicitly conserved, the earliest of the competing names is adopted in accordance with Art. 57.

43. *Article 14 Note 4*: When a name has been conserved against an earlier name based on a different type, the latter . . . . . .

V. COMMENTS AND PROPOSALS BY G. ROWLEY (Bayfordbury, G.B.)

Attempts to apply the latest rulings to the naming of such diverse plants as roses and ragworts prompt me to make a few criticisms and suggest minor alterations for the better.

Articles 22 and 26. Discussion: The decision to make the "type" subgenus or section bear the name of the genus unchanged (Art. 22) may satisfy a delight in

logic and symmetry, but is not without drawbacks. For instance, students of blackberries are accustomed to speak of "*Eubatus*" and the "*Moriferi*" and find them useful terms as short labels for their respective subgenus and section. Now, it seems, he must call them all "*Rubus*", or "*Rubus* Subgenus *Rubus* Section *Rubus*" to be precise. One can hardly expect these familiar names to be dropped when the only alternative is clumsy and ambiguous. Many other examples come to mind — a few are listed in Nat. Cact. & Succ. J. XI, 1956, 59.

Further complications ensue from attempts to apply consistently Art. 26, whereby the "type" element of each subdivision of a species bears the specific epithet unchanged. For instance, anyone compiling lists of plant names is now compelled to decide among the subspecies, varieties or forms which should bear the specific epithet unchanged. As pointed out in the above-cited article, typification of these lower taxa may be a laborious library and herbarium job.

It is already clear from earlier publications in "Taxon" that others find these innovations a mixed blessing. Had they been recommendations or articles effective only after a specified date the drawbacks would be overcome. No proposal for such a change is made here, though perhaps at a later stage it should be considered after others have offered their views.

44. *Recommendation 46A*: For "Hort". read "hort.".

Discussion: This is a trifling point, but in indicating that a name is of garden origin a small initial should be used in order to avoid any confusion with personal names of authors, as e.g. Sir Arthur Hort.

Recommendation 50C: On the matter of *nomina nuda* there has already been a request that these should be properly defined in the Code (De Wit in Taxon V, Feb. 1956, 4). This was rejected by Ross (l.c. May 1956, 41) who avoided the issue by deleting the references to *nomina nuda* in Arts. 42 and 45C in the manuscript of the 1956 Code. He overlooked its use in Art. 50C, however.

I fully support De Wit that we need definitions of such commonly used terms as *nomen nudum*, *nomen subnudum*, as well as *nomen confusum*, and where better to seek them than in the Code? Some terms, like *nothomorpha*, are adequately defined. Surely the editors owe it to us to define the words they use, and achieve nothing by circumlocution?

45. *Article 65*: Delete the example of *Rosa villosa* L. and substitute a better one.

Discussion: The choice of *Rosa villosa* L. as an example of a name to be rejected is not a happy one. Many modern rosarians have found it possible to retain the name in a definite sense in spite of varied interpretations nearer the time of its original publication. If the example of *Rosa villosa* L. is to be rigidly followed, half the well-known Linnean rose names are in danger of being jettisoned. Surely there are better examples to suit the case than this?

46. *Article 67*: After "A name must be rejected when it is based on a monstrosity." Add: "An exception is made in the case of double-flowered mutants, where the name is taken to apply to the single-flowered species as found in the wild.

Example: *Rosa roxburghii* Tratt. is taken to be the spontaneous single-flowered species (*R. roxburghii* f. *normalis* Rehd. & Wils.) although originally described from a double-flowered cultivar (now *R. roxburghii* var. *plena* Rehd.)"

Discussion: This amendment is needed to end the topsy-turvy situation of wild species being named as varieties or forms of cultivars, simply because the latter happen to have priority in naming. Several such cases exist in *Rosa*, e.g. *R. chinensis* Jacq. *spontanea* Rehd.; *R. hemisphaerica* Herrm. *rapinii* Rowl.; *R. xanthina* Lindl. *spontanea* Rehd.

Further exceptions might be warranted for species based on chimaeras or variegations. For example, *Echeveria hoveyi* was described by Rose from cultivated material and has since shown by repeated reversions that it is a chimaerical mutant of *E. zahnii*. Because the former is the validly published name, the species has to become a subordinate taxon of the monstrosity.

47. *Article 70*: Delete paragraph (4).

Discussion: In view of the encouragement that Arts. 22 and 26 give to such names as *Rubus* Subg. *Rubus* § *Rubus* and *Sedum roseum roseum roseum*, what possible justification can there now be for retaining the old tautonym rule forbidding such innocent repetitions as *Opuntia opuntia*? Can anyone support its survival as anything more than archaic pedantry?

48. *Appendix I Article H 1*: After "Where binary "specific" names .. are used .. all offspring of crosses between individuals of the same parent species receive the same binary name." Add: "An exception is made in the case of amphidiploids behaving as species, which bear a separate epithet without the × sign and are subject to the same rules as wild species.

Example: *Rosa* × *jacksonii* Willm. = *R. rugosa* Thunb. × *wichuraiana* Crép., covering all diploid progeny such as 'Lady Duncan' and 'Max Graf', but *R. kordesii* Wulff = *R. rugosa* Thunb. × *wichuraiana* Crép., a fertile amphidiploid species."

Discussion: Not only does present jurisdiction ignore the existence of amphidiploids, but in the above-mentioned example it would have us make *kordesii*, the true-breeding species, a variety or subspecies of ×*jacksonii*, the sterile diploid hybrid.

VI. PROPOSALS BY H. ST. JOHN (Honolulu)

49. *Article 23*: After the first sentence, insert: This epithet is of one or two, but not more than two, words.

The second sentence now reads: "If an epithet consists of two or more words, these must either be united or hyphened."

Delete the phrase: "or more words."

Argument: These changes will return the article to the wording of the Stockholm, 1950, Code. They will prevent the acceptance of long phrase epithets and make clear the distinction between binary and polynomial nomenclature.

50. *Article 42*: In line 2, after species, insert: or infraspecific taxon.

Argument: This addition would make the article equally applicable to varieties, subvarieties, formae, subformae, or other intercallated taxa. It is obvious that they, like species and subspecies, should be invalid if, when they are published, the higher taxon to which they are assigned has not been or is not simultaneously published.

VII. NECKER'S ELEMENTA BOTANICA

R. Mansfeld (Gatersleben)

N. J. Necker, Elementa botanica (1791), bezeichnet die Gattungen als species naturales und Gattungsgruppen als genera genuina. Das Buch enthält eine erhebliche Anzahl neuer Gattungsnamen, die bisher stillschweigend als gültig angenommen worden sind. Wenn man diese jetzt verwerfen würde, läßt sich schwer übersehen, was das praktisch für Änderungen in der Nomenklatur der Gattungen nach sich ziehen würde. Um neue Änderungen zu vermeiden, halte ich es für zweckmäßig,

in Artikel 5 einen Zusatz zu machen, das die species naturales bei Necker als weitere Ausnahme wie gültig veröffentlichte Gattungen behandelt werden. Der letzte Absatz des Artikels 5 müßte dann etwa heißen:

51. *Article 5 last para.*: An exception is made for names of the infrageneric taxa termed tribes (tribus) in Fries' Systema Mycologicum and the generic taxa termed natural species (species naturales) in Necker's Elementa Botanica, which are treated as validly published.

VIII. PROPOSALS ON PALAEOBOTANICAL NOMENCLATURE

C. A. Arnold (Ann Arbor, Mich.)

52. *Article PB 1*: Since the names of fossil plants are usually applied to detached parts of which the connections to other parts can seldom be demonstrated, it has been customary to name *organ genera* and *form genera* when the use of natural or biological genera is not feasible.

An *organ genus* is created for detached parts (or attached parts if they are considered independently) of the same morphological rank that are obviously related and of which affinity with some natural group is known.

A *form genus* is created for plant parts that are grouped together because of similarity in form or structure but without consideration of affinities either among themselves or with some natural group.

Comments: The above redefinitions of organ and form genera are suggested as substitutes for the present ones because the latter fail to set forth the distinctions between the two. The definition of the organ genus that is given on p. 55 can also be used to define the form genus. A form genus may consist of "single organs of the same morphological category" (leaves, seeds, etc.) or of "restricted groups of organs connected together". This is essentially the definition that is given for an organ genus. The essential fact that to belong to an organ genus the parts must belong to some natural group is not even implied in the definition. This basic idea is not expressed at all except in Note 2. It should be embodied in the definition. Furthermore, the reasons for attempting to distinguish between organ and form genera are not, as implied in the first paragraph of Article PB 1, merely because the names are usually applied to detached parts. We distinguish them because the affinities of some detached parts are known while for others they are not known. When the affinities are known, we assign them to an organ genus: when they are not known, we assign them to a form genus. The distinction should be firmly implanted in the definitions.

I believe a restatement of Article PB 1 is desirable.

53. *Recommendation PB 4A*: The whole specimen or specimens used in formulating the diagnosis of a new taxon should be considered the type or types. If type specimens are cut into pieces (sections of fossil woods, pieces of coal ball plants, etc.) that are distributed among several institutions, those portions or sections that were originally used when the taxon was described should be clearly marked with an identifying label or other suitable designation.

Comments: This may be a curatorial matter rather than one of nomenclature, but a statement seems in order to settle the often recurring question whether the type is the whole specimen or merely the parts that happened to be used when the new taxon was described. Thus if the holotype of a new species of fossil wood is one section, what is the status of additional sections cut from the same specimen?

54. *New Article PB 7*: Generic names of fossil plants that were constructed upon the names of genera or higher taxa of living plants (*Sequoioxylon, Archaeopodocarpus, Ginkgoites*) and which were originally proposed because of supposed affinities with or resemblances to living taxa may be rejected if it becomes evident that they were based on erroneous interpretations of affinity or likeness. Such names, however, may be legitimately retained for material to which the names were subsequently applied if new types are designated. In this case the effective date of publication of such a genus would be the date of designation of the new type.

55. *New Recommendation PB 7A*: It is urgently recommended that this provision be used with great caution and only when direct comparisons between the fossil material and material of the living members can be made. Furthermore, when a validly published and prior name is rejected under the conditions stated above, all characters wherein the fossil differs from the misapplied living taxon should be clearly set forth. Likewise, if the newly proposed name is based upon some living taxon it is urged that the resemblances between the fossil and the living form be given in as much detail as possible.

Comments: This slight departure from the rule of priority should be allowed to make it possible to rectify some past mistakes and to thereby avoid perpetual use of some incorrect and misleading names. It is an established fact that *Prototaxites* Dawson is not even remotely related to *Taxus*, yet the name has priority and was validly published, and under the present rules it must continue to be used for an extinct plant that resembles a giant sea weed more closely than any other known plant. Likewise *Yuccites* Schimper and Mougeot is not a monocotyledon, and *Fagopsis* Hollick has recently been placed in the Betulaceae. The proposal is aimed particularly at fossil woods in which the generic names are derived from the stem words of living genera with the addition of the suffix *-oxylon* (*Cedroxylon, Dipterocarpoxylon, Quercoxylon*). It has been found in several instances that the generitypes are unrelated to the genera after which they were named. This provision would under no circumstances permit rejection of names not based upon names of living genera.

To Article PB 2 should be added: "except for the special provision in Article PB 7".

56. *New Article PB 8*: When two or more organs of different morphological rank are found connected, or when connection is obvious through similar epidermal or other structures, it is permissible to:

(a) propose a new *combination genus*, or

(b) use one of the two or more existing organ genus names for the combination.

However, if the combination consists of an organ and a form genus, the name of the organ genus takes precedence.

57. *Recommendation PB 8A*: New combination genera should be proposed only when no other suitable name exists or when enough of the organs of the plant are brought together to give a previously unrevealed concept of the habit or appearance of the plant. The mere discovery of a specimen of a validly named stem with leaves attached would not constitute grounds for a new combination genus unless the newly discovered attached leaves are very different from those commonly observed as borne by that particular stem.

In selecting one of the organ genera for a combination it is recommended that:

1. For compressed fernlike foliage bearing fructifications the name that has been applied to the fructification be used.

2. In genera based mainly upon stems and branches, as in most of the Lycopsida, Sphenopsida, Coenopteridales, Pteridospermopsida, Cycadopsida, and Coniferopsida, that those names legitimately applied to these organs be applied. In case of detached

inflorescences of these groups, the names of the organs having the highest degree of complexity take precedence. Example: *Lepidostrobus* would take precedence over *Lepidophyllum*, *Cordaianthus* over *Cardiocarpon*, etc., for any of these found in connection. If seeds (*Pachytesta*, *Trigonocarpus*) are found attached to foliage generally assigned to form genera (*Alethopteris*, *Neuropteris*) a combination genus would be in order in most instances if the stem to which they belong is not known. The name of the "seed genus" would not always be appropriate because it is often determined by the type of preservation.

3. For remains of Angiospermopsida that part should be selected which best expresses the affinities of the combination.

4. For other groups or under special circumstances, whatever course of action is most appropriate.

Comments: The object of this proposal is to give formal sanction to some current practices for which the rule of priority has been the only guiding principle. It leaves much to the judgment of the individual.

By giving precedence to names commonly applied to stems in *2* above, the continued use of names like *Lepidodendron*, *Sigillaria*, *Calamites*, and *Cordaites* for whole plants is safeguarded, and reason for feeling impelled to substitute new names for familiar and widely used ones is removed.

It is quite apparent that the names for combinations should be selected on a different basis in different groups. Appropriateness and established usage should be followed rather than relying on arbitrary regulations designed for all groups.

INDICIS NOMINUM FAMILIARUM ANGIOSPERMARUM PRODROMUS

Additamenta et Corrigenda I

A. A. Bullock (Kew)

At the time of compilation of my list of family names Dostál's *Botanická Nomenklatura* (1957) was not available to me. I have now examined the list of family names given by that author on pages 196-220 and find that although Dostál's list is not by any means complete, a number of names which I omitted are included in it. The references given by Dostál consist only of the date and author's name. Some of these I have failed to find: others appear to be inaccurate, and still others evidently refer to publications in which the names concerned are not validly published.

Dostál's list has led to many of the following additions and corrections, but for some of them I have to thank my colleagues at Kew and the British Museum, Dr. F. A. Stafleu at Utrecht and Dr. N. Hylander at Uppsala. In two long letters Dr. Boivin has shown that the spellings *Ginkgo* and *Ginkgoaceae* are orthographic errors impossible to obtain from correctly transliterated Japanese. With Dr. Boivin's scholarship I cannot disagree, but in spite of Article 73 I suggest that it would be wrong to correct these and other similar errors which have gained sanction by long usage. I have to thank especially Prof. R. D. Gibbs [1] of McGill University, Montreal, for a long list of corrections and additions.

[1] This included the following names in a paper by van Tieghem and Costantin, 1918, which I have not yet traced:- *Apodanthaceae, Cardiopterygaceae, Codiaceae, Diospyraceae, Euthemidaceae, Impatientaceae, Mastixiaceae, Peganaceae, Wallaceaceae.* — *A.A.B.*

In the original introduction to the list, I should have pointed out that the status of the 'families' and 'tribes' described in Link, Hort. Reg. Bot. Berol. 1833 is uncertain and I have rejected the names concerned. Also, after publication, Dr. Stafleu pointed out to me that I had overlooked the four hundred and more family names proposed by Rafinesque between 1815 and 1838. In spite of the genius of Rafinesque, the system proposed by him is not a natural one in the sense of Linnaeus, Jussieu and later authors; it is in fact based on the use of characters of flower and fruit very much in the same way as the number of parts and their union was used in the Linnaean sexual system. Some of his families, arrived at in this way, correspond very exactly to those of modern families built up synthetically; others — and these the majority, — are extremely heterogeneous. It may or may not be significant that Merrill, in his otherwise exhaustive commentary on Rafinesque's work, did not mention family names. In all the circumstances I propose not to list Rafinesque's names of families; whether they should be included in a final list or not I leave to others to decide. It has to be admitted that they are usually validly published and often exactly typified.

In several author citations "Sieb. et Zucc." was wrongly expanded to "Sieber et Zuccarini" instead of "Siebold et Zuccarini," and some other authors of names of type-genera are more or less incorrect. It was not thought worth-while to write out correction entries for these and similar orthographic errors which may be found in the original list.

A further self-imposed "rule" which I have tried in general to follow concerns the acceptance of names of families derived from names of tribes or other infra-familial categories. Such names have not been accepted unless the derivation is clearly stated by the author in a form in which the reference may be readily traced. Thus Reichenbach's *Conspectus* is very largely ignored, as well as Caruel's (1881) list.

Additions are marked (A), corrections are marked (C).

(C) *Abolbodaceae*. — T.: *Abolboda* Humboldt et Bonpland

(A) *Aeginetiaceae* Livera, Ann. Roy. Bot. Gard. Peradiniya 10: 153. 1927.
T.: *Aeginetia* Linnaeus

(C) Aesculaceae Lindley, Nat. Syst. ed. 2. 84. 1836 (nom. illeg. ≡ *Hippocastanaceae*).
T.: *Aesculus* Linnaeus

(A) Ammiaceae Small, Fl. Southeast U.S. 856. 1903 (nom. illeg. vs. *Apiaceae* vel *Umbelliferae*).
T.: *Ammi* Linnaeus

(A) Anagalleidae Baudo, Ann. Sc. Nat. sér. 2. 20: 344. 1843 (nom. illeg. vs. *Primulaceae*).
T.: *Anagallis* Linnaeus

(A) *Arctotidaceae* Bessey, Ann. Missouri Bot. Garden 2: 163. 1915.
T.: *Arctotis* Linnaeus

(C) *Ardisiaceae* A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 15: 350. 1810 (nom. rejic. prop. vs. *Myrsinaceae* R. Brown, 1810).
T.: *Ardisia* Swartz, nom. cons.

(C) *Aspidistraceae* Kunth, Enum. Pl. 5: 310. 1850 ('*Aspidistreae*').
T.: *Aspidistra* Ker-Gawler

(C) *Asteropeiaceae* Takhtadzhyan, 1952, vide Dostál, Bot. Nomenkl. 199. 1957 (etiam Takhtadzhyan, Proiskh. Pokruitosem. Rast. 89. 1954).
T.: *Asteropeia* Thouars

(C) *Balsaminaceae* A. Richard, Dict. Class. Hist. Nat. 2: 173. 1822 ('*Balsamineae*').
T.: *Impatiens* Linnaeus (syn. *Balsamina* Gaertner, nom. illeg.)

(C) *Bifariaceae* Nakai, Bull. Nat. Sc. Mus Tokyo No. 31: 46. 1952.
T.: *Bifaria* van Tieghem

(A) *Boerlagellaceae* Lam, Bull. Jard. Bot. Buitenzorg. Sér. 3. 7: 250. 1925.
T.: *Boerlagella* Pierre ex Boerlage (*Boerlagia* Pierre, Dec. 1890, non *Boerlagea* Cogniaux ex Boerlage, Aug. 1890)

(C) Camellieae A. P. de Candolle, Prodr. 1: 529. 1824 (nom. illeg. vs. *Theaceae*).
T.: *Camellia* Linnaeus

(C) Cannabinaceae. This spelling is incorrect; read *Cannabiaceae*.

(C) Carduaceae Small, Fl. Southeast U.S. 1152. 1903 (nom. illeg. vs. *Asteraceae* vel *Compositae*).

(C) *Carpodetaceae* Fenzl, Regensb. Denkschr. 3: 155. *t. 1-2.* 1841 ('*Carpodeteae*').
T.: *Carpodetus* J. R. et G. Forster

(A) *Chamaelauciaceae* Lindley, Veg. Kingdom 721. 1846.
T.: *Chamaelaucium* Desfontaines

(A) *Chelidoniaceae* Nakai, Bull. Nat. Sc. Mus. Tokyo No. 31: 51. 1952.
T.: *Chelidonium* Linnaeus

(C) *Chloranthaceae* R. Brown ex Sims, Bot. Mag. 48: *t. 2190.* 1821 ('*Chlorantheae*').
T.: *Chloranthus* Swartz

(A) *Circaeasteraceae* Post et Kuntze, Lex. Gen. Phan. 126. 1903 (nomen in syn. sub *Chloranthaceae*).
T.: *Circaeaster* Maximowicz

(C) Coridaceae. For this incorrect form read *Coriaceae* (Airy-Shaw, Kew Bull. 1951: 31. 1951, in adnot.)

(C) *Cyanastraceae* Engler, Bot. Jahrb. 28: 357. *t. 9-10.* 1900.
T.: *Cyanastrum* Oliver, non Cassini

(A) *Cyphiaceae* A. De Candolle in De Candolle, Prodr. 7: 497. 1839.
T.: *Cyphia* Bergius

(C) *Cyrillaceae* Torrey et A. Gray, Fl. Bor. Amer. 1: 256. 1838 ('*Cyrilleae*').
T.: *Cyrilla* Linnaeus

(C) Daucaceae. This illegitimate name should be replaced by *Apiaceae*, not *Ammiaceae*.

(C) *Davidiaceae* Takhtadzhyan, 1952, vide Dostál Bot. Nomenkl. 203. 1957 (etiam Takhtadzhyan, Proiskh. Pokruitosem. Rast. 89. 1954).
T.: *Davidia* Baillon

(A) *Dionaeaceae* Small, Fl. Southeast U.S. 492. 1903.
T.: *Dionaea* Ellis

(A) Diospyraceae Novák, 1954, vide Dostál, Bot. Nomenkl. 204. 1957 (nom. illeg. vs. *Ebenaceae*).
T.: *Diospyros* Linnaeus

(C) *Donatiaceae* Takhtadzhyan, Proiskh. Pokruitosem. Rast. 91. 1954. — Dostál, Bot. Nomenkl. 204. 1957.
T.: *Donatia* J. R. et G. Forster, nom. cons. non Loefling

(C) *Ebenaceae* Ventenat, Tabl. Regne Vég. 2: 443. 1799 (nom. cons. prop. vs. *Guaiacanaceae*).
T.: *Diospyros* Linnaeus (syn. *Ebenus* Burmann ex Kuntze, non Linnaeus; *Maba* J. R. et G. Forster)

(C) Echinopsidaceae. This spelling, given by Link, should be corrected to read *Echinopiaceae*.

(A) Ensatae Ker-Gawler in Koenig et Sims, Ann. Bot. 1: 219. 1804 (nom. illeg. ≡ *Iridaceae*).

(A) *Eremolepidaceae* van Tieghem, C. R. Acad. Sc. Paris 150: 1718. 1910.
T.: *Eremolepis* Grisebach

(C) *Eremosynaceae* Takhtadzhyan, Proiskh. Pokruitosem. Rast. 86. 1954. — Dostál, Bot. Nomenkl. 205. 1957.
T.: *Eremosyne* Endlicher

(C) *Ficaceae* Dumortier, 1829 (nom. rejic. prop. vs. *Moraceae* Link, 1831).

(C) Forestiereae Endlicher, 1837 (nom. illeg. vs. *Scepaceae* Lindley, 1836).

(C) *Frankeniaceae* A. St. Hilaire, Mém. Plac. Centr. 39. 1815.
T.: *Frankenia* Linnaeus

(A) *Gaiadendraceae* van Tieghem, C. R. Acad. Sc. Paris 150: 1718. 1910. — Nakai, Bull. Nat. Sc. Mus. Tokyo No. 31: 45. 1952 (in clavi).
T.: *Gaiadendron* G. Don

(A) Galeariaceae Pierre, Bull. Soc. Linn. Paris, 1327. 1897 (nom. illeg. vs. *Pandaceae*).
T.: *Galearia* Zollinger et Moritzi, non Presl

(A) *Heleniaceae* Bessey, Ann. Missouri Bot. Garden 2: 163. 1915.
T.: *Helenium* Linnaeus

(A) *Helianthaceae* Bessey, Ann. Missouri Bot. Garden 2: 163. 1915.
T.: *Helianthus* Linnaeus

(C) *Helleboraceae* Loiseleur, Man. Pl. Us. Indig. 1: 1. 1819.
T.: *Helleborus* Linnaeus

(C) *Hippocastanaceae* De Candolle, Prodr. 1: 597. 1824 (*'Hippocastaneae'*).
T.: *Aesculus* Linnaeus

(C) *Hippuridaceae* Link, Enum. Pl. Berol. Alt. 1: 5. 1821 (*'Hippurideae'*).
T.: *Hippuris* Linnaeus

(A) *Holacanthaceae* Jadin, Ann. Sc. Nat. Sér. 8. 13: 228. 1901.
T.: *Holacantha* A. Gray

(A) *Hydrastidaceae* Lemesle, C. R. Acad. Sc. Paris 227: 221. 1948. — Rev. Gén. Bot. 57: 9. 1950.
T.: *Hydrastis* Linnaeus

(C) *Hydrocotylaceae* Hylander, Nomenkl. Syst. Studien in Uppsala Univ. Årsskr. 1945(7): 20. 1945.
T.: *Hydrocotyle* Linnaeus

(C) Hydrostachydaceae. This spelling, given by Engler, should be corrected to read *Hydrostachyoaceae*.

(C) *Hyperantheraceae*.
T.: *Moringa* Adanson

(A) *Inulaceae* Bessey, Ann. Missouri Bot. Garden 2: 163. 1915.
T.: *Inula* Linnaeus

(A) Isophysidaceae Takhtadzhyan, Proiskh. Pokruitosem. Rast. 92. 1954 (nom. illeg. vs. *Hewardiacea*).
T.: *Isophysis* T. Moore

(C) *Julianiaceae* Hemsley, Journ. Bot. 44: 379. 1906. — Phil. Trans. Roy. Soc. London, ser. B. 199: 169. *t. 18-24.* 1907.
T.: *Juliania* Schlechtendal, nom. cons. prop. (syn. *Amphioterygium* Standley)

(C) *Juncagineae* L. C. Richard, Mém. Mus. Hist. Nat. Paris 1: 365. 1815 (nom. rejic. prop. vs. *Scheuchzeriaceae*).
T.: *Triglochin* Linnaeus (syn. *Juncago* Moench)

(C) *Lacistemataceae*. This appears to be more correct than *Lacistemaceae* of the original list.

(A) *Lactucaceae* Bessey, Ann. Missouri Bot. Garden 2: 164. 1915.
T.: *Lactuca* Linnaeus

(C) Lapageriaceae Kunth, Enum. Pl. 5: 283. 1850 (nom. illeg. vs. *Philesiaceae*).
T.: *Lapageria* Ruiz et Pavon

(C) *Lardizabalaceae* Decaisne, Arch. Mus. Hist. Nat. Paris 1: 185. *t. 10-13.* 1839 (*'Lardizabaleae'*).
T.: *Lardizabala* Ruiz et Pavon

(A) *Lepidariaceae* van Tieghem, C. R. Acad. Sc. Paris 150: 1718. 1910.
T.: *Lepidaria* van Tieghem

(A) *Lepidoceraceae* Nakai, Bull. Nat. Sc. Mus. Tokyo No. 31: 45. 1952.
T.: *Lepidoceras* J. D. Hooker

(A) Leptospermaceae Kausel in Angely, Cat. Estat. Gen. Bot. Fan. No. 28: 4. 1957 (adnot. 1; nom. ut videtur illeg. vs. *Chamaelauciaceae*).
T.: *Leptospermum* J. R. et G. Forster

(A) *Lewisiaceae* W. J. Hooker et Arnott, Bot. Beechey Voy. 345. *t. 86.* 1840 (*'Lewisieae'*).
T.: *Lewisia* Pursh

(A) *Limnocharitaceae* Takhtadzhyan, Proiskh. Pokruitosem. Rast. 91. 1954 (nomen in sched.).
T.: *Limnocharis* Humboldt et Bonpland

(C) *Lophiraceae* Endlicher, Ench. Bot. 526. 1841.
T.: *Lophira* Gaertner

(A) Luzuriagaceae Dostál, Bot. Nomenkl. 210. 1957 (nom. illeg. vs. *Philesiaceae*).
T.: *Luzuriaga* Ruiz et Pavon

(A) *Mastixiaceae* Takhtadzhyan, Proiskh. Pokruitosem. Rast. 89. 1954. — Dostál, Bot. Nomenkl. 210. 1957.
T.: *Mastixia* Blume

(C) *Mayacaceae* Kunth, Abhandl. K. Akad. Wiss. Berlin 1841: 96. 1841 (*'Mayaceae'*).
T.: *Mayaca* Aublet

(A) Mirabilidaceae Dostál, Kvetena Csr 361. 1950 (nom. illeg. vs. *Nyctaginaceae).*
T.: *Mirabilis* Linnaeus

(C) *Molluginaceae* Wight, Ill. Ind. Bot. 2: 42. 1850 (*'Mollugineae'*).
T.: *Mollugo* Linnaeus

(C) **Moraceae** Link, 1831 (nom. cons. prop. vs. *Ficaceae* Dumortier 1829).

(C) *Moringaceae.*
T.: *Moringa* Adanson

(A) *Mouririaceae* Gardner in W. J. Hooker, Journ. Bot. 2: 22. *t. 1.* 1840.
T.: *Mouriria* Jussieu

(C) **Myrsinaceae** R. Brown, 1810 (nom. cons. prop. vs. *Ardisiaceae* A. L. De Jussieu, 1810).

(A) *Nandhirobeae* A. St. Hilaire, 1822; vide *Nhandirobaceae.*

(A) Narthecíaceae Small, Man. S. E. Flora 287. 1933 (nom. illeg. vs. *Abaminaceae*).
T.: *Narthecium* Hudson, nom. cons. (syn. *Abama* Adanson)

(A) *Nemacladaceae* Nuttall, Trans. Amer. Phil. Soc. n. s, 8: 254. 1843.
T.: *Nemacladus* Nuttall

(A) *Naucleaceae* Wernham, New Phyt. 11: 225. 1912.
T.: *Nauclea* Linnaeus

(C) *Ophiopogonaceae* Kunth, Enum. Pl. 5: 297. 1850 (*'Ophiopogoneae'*).
T.: *Ophiopogon* Ker-Gawler

(A) Ophiriaceae Arnott in W. J. Hooker, Journ. Bot. 3: 266. 1841 (nom. illeg. vs. *Grubbiaceae*).
T.: *Ophiria* Lamarck

(C) *Opiliaceae* Valeton, Crit. Overz. Olacin. 136. 1886.
T.: *Opilia* Roxburgh

(A) Orchidanthaceae Dostál, Bot. Nomenkl. 212. 1957 (nom. illeg. vs. *Lowiaceae*).
T.: *Orchidantha* N. E. Brown

(C) Paviaceae Horaninow, Prim. Lin. Syst. Nat. 100. 1834 (nom. illeg. *Hippocastanaceae).*
T.: *Aesculus* Linnaeus (syn. *Pavia* Miller)

(C) Peliosantheae Salisbury, Gen. Pl. (ed. J. E. Gray) 63. 1866 (nom. illeg. vs. *Ophiopogonaceae*).
T.: *Peliosanthes* Andrews

(C) *Peperomiaceae* Novák, 1954, vide Dostál, Bot. Nomenkl. 213. 1957.
T.: *Peperomia* Ruiz et Pavon

(A) Peroniaceae Dostál, Bot. Nomenkl. 213. 1957 (nom. illeg. vs. *Sarcospermaceae).*
T.: *Peronia* R. Br. (nom. nud. illeg.)

(A) Phaseolaceae Ponce de Léon et Alvares, 1953, vide Dostál, Bot. Nomenkl. 213. 1957 (nom. illeg. vs. *Fabaceae* vel *Papilionaceae*).
T.: *Phaseolus* Linnaeus

(C) *Philydraceae* Link, Enum. Pl. Berol. Alt. 1: 5. 1821 (*'Philydrinae'*).
T.: *Philydrum* Gaertner

(C) **Pistiaceae** Dumortier, Anal. Fam. Pl. 59. 1829 (nom. cons. prop. vs. *Pistiaceae* C. A. Agardh 1826, nom. illeg.).
T.: *Pistia* Linnaeus

(A) Pistiaceae C. A. Agardh, Aphor. Bot. 240. 1826 (nom. illeg. vs. *Cytinaceae* et nom. rejic. prop. vs. *Pistiaceae* Dumortier, 1829. — Fam. heterogen. incl. *Cytinus* Linnaeus, *Nepenthes* Linnaeus et *Pistia* Linnaeus).

(A) *Psittacanthaceae* Nakai, Bull. Nat. Sc. Mus. Tokyo No. 31: 46. 1952.
T.: *Psittacanthus* Martius

(A) *Prunaceae* Bessey, Ann. Missouri Bot. Gard. 2: 148. 1915.
T.: *Prunus* Linnaeus

(A) Pyroleae Lindley, Coll. Bot. *t.* 5. 1821 (nom. illeg. ≡ *Monotropeae;* nom. rejic. prop. vs. *Pyrolaceae* Lindley, 1830).
T.: *Monotropa* Linnaeus

(A) *Razoumowskiaceae* van Tieghem, C. R. Acad. Sc. Paris. 150: 1718. 1910.
T.: *Razoumowskia* Bieberstein

(A) Rhaptopetalaceae Pierre ex van Tieghem, Ann. Sc. Nat. sér. 9. 1: 321. 1905 (nom. illeg. syn. *Scytopetalaceae*).
T.: *Rhaptopetalum* Pierre

(C) Rhodolaenaceae Bullock, Kew Bull. 1957: 410. 1958 (nom. illeg. vs. *Sarcolaenaceae*).

(C) *Rousseaceae* A. P. De Candolle, Prodr. 7: 521. 1839 ('*Roussaeaceae*').
T.: *Roussea* J. E. Smith

(A) *Sarcolaenaceae* Caruel, Nuova Giorn. Ital. 13: 221. 1881.
T.: *Sarcolaena* Thouars

(C) *Sarcospermaceae* Lam, Bull. Jard. Bot. Buitenzorg, Sér. 3. 7: 248. 1925.
T.: *Sarcosperma* J. D. Hooker

(C) **Scheuchzeriaceae** J. G. Agardh, Theoria Syst. Pl. Fam. Phan. 44. 1858 (nom. cons. prop. vs. *Juncagineae* et *Triglochineae*).
T.: *Scheuchzeria* Linnaeus

(A) Schizolaenaceae Wettstein, Handb. Syst. Bot. ed. 4. 2: 814. 1935 ('*Schizochlaenaceae*'; nom. illeg. vs. *Sarcolaenaceae*).
T.: *Schizolaena* Thouars ('*Schizochlaena*' auctt.)

(A) *Scutellariaceae* Caruel, Bull. Soc. Bot. France 33: 266. 1886.
T.: *Scutellaria* Linnaeus

(A) *Senecionidaceae* Bessey, Ann. Missouri Bot. Garden 2: 164. 1915.
T.: *Senecio* Linnaeus

(A) Spaetalumeae Wyeth et Nuttall, Journ. Nat. Acad. Sc. Philadelphia 7: 23. 1834 (nom. illeg. ≡ *Lewisiaceae*).
T.: *Lewisia* Pursh

(A) *Tetrameristaceae* J. Hutchinson ex Metcalf et Chalk, Anat. Dicot. 1: 339. 1950 — J. Hutchinson, Fam. Fl. Pl. ed. 2. 1: ined. 1958.
T.: *Tetramerista* Miquel

(A) *Torricelliaceae* Takhtadzhyan, Proiskh. Pokruitosem. Rast. 89. 1954 (nomen. in sched.).
T.: *Torricellia* De Candolle

(C) **Tremandraceae** De Candolle, 1824 (nom. cons. prop. vide Bullock, Kew Bull. 1957: 409. 1958).

(A) Treubaniaceae van Tieghem, C. R. Acad. Sc. Paris 150: 1718. 1910 (nom. illeg. vs. *Treubellaceae*).
T.: *Treubania* van Tieghem

(C) *Treubellaceae* van Tieghem, Bull. Soc. Bot. France 44: 105. 1897. — C. R. Acad. Sc. Paris 124: 656. 1897.
T.: *Treubania* van Tieghem (syn. *Treubella* van Tieghem, nom. illeg. non Pierre).

(C) Triglochineae Dumortier, Anal. Fam. Pl. 59. 1829 (nom. illeg. vs. *Juncagineae;* nom. rejic. prop. vs. *Scheuchzeriaceae*).
T.: *Triglochin* Linnaeus

(C) *Uvulariaceae* Kunth, Enum. Pl. 4: 199. 1843 ('*Uvularieae*').
T.: *Uvularia* Linnaeus

(C) **Verbenaceae** Jaume St. Hilaire, Expos. Fam. Nat. 1: 245. 1805. — A. L. de Jussieu, Ann. Mus. Hist. Nat. Paris 7: 64. 1806 (nom. cons. prop. vs. *Viticeae*).
T.: *Verbena* Linnaeus

(A) *Vernoniaceae* Bessey, Ann. Missouri Bot. Garden 2: 163. 1915.
T.: *Vernonia* Schreber

(A) *Wellstediaceae* Novák, 1942, vide Dostál, Bot. Nomenkl. 220. 1957.
T.: *Wellstedia* I. B. Balfour

(A) Winteranaceae O. Warburg in Engler et Prantl, Nat. Pflanzenfam. 3(6): 314. 1895 (nom. illeg. ≡ *Canellaceae*).
T.: *Canella* P. Browne (syn. *Winterana* Linnaeus)

THE GENERIC NAMES PROPOSED FOR HYMENOMYCETES—VIII*

Auriculariaceae, Septobasidiaceae, Tremellaceae, Dacrymycetaceae

M. A. Donk **

Summary

1. This eighth part deals with the four families mentioned in the sub-title and which may be united under the common denomination of hymenomycetous Heterobasidiae.

2. Seven new combinations are proposed.[1] The name *Septobasidium couchi* Donk will be validly published.

3. *Ditangium* P. Karst. should be retained for the imperfect stage of *Craterocolla* Bref., the latter name being the correct one for the perfect stage. *Achroomyces* Bonord. is the correct name for *Platygloea* J. Schroet.; and *Ductifera* Lloyd, for *Seismosarca* Cooke sensu auctt. and *Gloeotromera* Ervin. *Musciclavus* Velen. is identified with *Eocronartium* Atk.

4. *Kriegeria* Rabenh. is impriorable, which makes *Kriegeria* Bres. (*Xenogloea* H. & P. Syd.) a legitimate name. *Tremiscus* (Pers.) Lév. is considered validly published and should replace *Phlogiotis* Quél.

5. *Basidiodendron* J. Rick is based on a species of Tremellaceae.

6. *Xylissus* Rafin. might well be a validly published name for Myxomycetes.

[1] These new combinations are: **Achroomyces disciformis** (Fr.) Donk, *comb. nov.* [basinym, *Tremella disciformis* Fr., Syst. mycol. **2** (1): 216. 1822]; **Ductifera pululahuana** (Pat. apud Pat. & Lagerh.) Donk, *comb. nov.* (basinym, *Tremella pululahuana* Pat. *apud* Pat. & Lagerh. *in* Bull. Soc. mycol. France **9**: 138. 1893); **Hoehnelomyces macrosporus** (Penz. & Sacc.) Boedijn, *comb. nov.* (basinym, *Sphaeronemella macrospora* Penz. & Sacc., Ic. Fung. 93 *pl. 62 f. 4.* 1904); **Septobasidium ramorum** (Schw.: Fr.) Donk. *comb. nov.* [basinym, *Racodium ramosum* [!] Schw. *in* Schr. naturf. Ges. Leipzig **1**: 131. 1822; *Oedemium ramorum* (Schw.) Fr., Syst. mycol. **3** (2): 345. 1832]; **Tremellodendron candicans** (Fr.) Donk, *comb. nov.* [basinym, *Thelephora candida* (Schw.) Fr., Elench. **1**: 168. 1828 = *Thelephora candicans* Fr., Syst. mycol. **3** (Index): 185. 1832; not *Thelephora candida* Schw.: Fr., Elench. **1**: 189. 1828]; and **Tremiscus helvelloides** (DC. per Fr.) Donk, *comb. nov.* [basinym, *Tremella helvelloides* DC. *per* Pers.: Fr., Syst. mycol. **2** (1): 211. 1822]. Also **Helicobasidium brebissonii** (Desm.) Donk, *comb. nov.* (basinym, *Protonema brebisonii* Desm., Pl. crypt. Nord France No. 651. 1834) to replace *Helicobasidium purpureum* Pat.

Introduction.—This paper forms the eighth part of a series planned to give an annotated nomenclatorial enumeration of all generic names proposed for Hymenomycetes. For some general remarks the reader is referred to the "Introduction to the series" (*in* Reinwardtia **1**: 199-203. 1951) in which also some technical terms are explained. The use of '*per*' instead of '*ex*' between author's names in connection with devalidated names is an enovation recently proposed (Donk *in* Taxon **6**: 255-256. 1957): it connects an author who would validly have published the name if the starting point of a later date than May 1, 1953 of the group concerned had not been adopted (devalidated name) with the citation of the author who actually validly published the name (revalidated name).

* Part I ("Cyphellaceae") of this series was published *in* Reinwardtia **1**: 199-220. 1951; Part II (Hymenolichenes), *in* Reinwardtia **2**: 435-440. 1954; Part III ("Clavariaceae"), *in* Reinwardtia **2**: 441-493. 1954; Part IV (Boletaceae), *in* Reinwardtia **3**: 275-313, 1955; Part V ("Hydnaceae"), *in* Taxon **5**: 69-80, 95-115. 1956; Part VI (Brachybasidiaceae, Cryptobasidiaceae, Exobasidiaceae), *in* Reinwardtia **4**: 113-118. 1956; Part VII ("Thelephoraceae"), *in* Taxon **6**: 17-28, 68-85, 106-123. 1957.

** Rijksherbarium, Leiden.

I am very much indebted to Mr. D. A. Reid, The Herbarium, Royal Botanic Gardens, Kew, for linguistic improvements.

DEFINITION.—Of the families dealt with, the Auriculariaceae and the Tremellaceae are taken in a wide sense; the former family inclusive of the Phleogenaceae, Stilbaceae, and Saccoblastiaceae; the latter inclusive of the Hyaloriaceae and Sirobasidiaceae.

The field covered is that of what may be called the hymenomycetous Heterobasidiae or the heterobasidious Hymenomycetes, with the exception of *Tulasnella* J. Schroet., *Ceratobasidium* D. P. Rog., *Botryobasidium* Donk, and related genera; of *Cerinomyces* G. W. Mart.; and of *Vuilleminia* Maire. These genera have been considered in the Part dealing with the "Thelephoraceae." The Brachybasidiaceae and the Exobasidiaceae, which have sometimes been brought into connection with the Heterobasidiae, have been separately dealth with, together with the recently delimitated Cryptobasidiaceae.

The 'Tremellinei' have from the start been a dumping ground for many gelatinous fungi that are not even remotely related to the families to be dealt with below. Many genera that found a place in it for some time have not even been mentioned in this paper; however, names of genera that have been included during the last few decades, often only temporarily, will usually be found taken into consideration.

The Sporobolomycetaceae will form the subject of a further instalment.

ALPHABETICAL ENUMERATION

Achromyces.—See *Achroomyces.*

Achroomyces Bonord., Handb. allg. Mykol. 135. 1851. — ETYMOLOGY: *ἀ-*, without; *χρώς*, colour; *μυκής*, fungus. Gender: m. — TYPE SPECIES (only original species): *Achroomyces tumidus* Bonord. (Auriculariaceae). —Recognized by Von Höhnel (*in* Ann. mycol. 2: 271. 1904) as an auriculariaceous fungus which he regarded as very close to, if not identical with, *Stictis tiliae* Lasch, *Achroomyces pubescens* Riess, *Platygloea nigricans* ("Fr.") J. Schroet., and *Tachaphantium tiliae* Bref. = *Platygloea tiliae* (Bref.) Sacc., all names for a species growing on fallen branches of *Tilia*. The type collection of *Achroomyces* was recorded from a fallen branch of *Betula*. The substratum seems the only hindrance unconditionally to identify the two species; it is quite possible that Bonorden made an error in this regard. — It would appear that the correct name of the species on *Tilia* is *Achroomyces disciformis* (Fr.) Donk, see page 164. — VALID PUBLICATION. Descriptio generico-specifica. — VARIANT SPELLING: "*Achromyces* Riess"; P. Syd. *in* Sacc. Syll. Fung. **12**: 2. 1897 (as a synonym). — TYPONYMS. If *Achroomyces disciformis* is regarded as conspecific with *A. tumidus*, two generic names, based on the former species, become typonyms: *Platygloea* J. Schroet. (1887) and *Tachaphantium* Bref. (1888). — STATUS. There are mycologists who doubt the above interpretation of Bonorden's genus, and consider the name a doubtful one. However, those who are familiar with the microscopic structure of *A. disciformis*, are likely to share Von Höhnel's view: Bonorden's figure of microscopic data (*op cit. pl. 11 f. 231*) may be incorrect in certain details, but as a whole it matches *A. disciformis* extremely well. — There is a tendency to suppress the name *Achroomyces* in favour of *Platygloea* J. Schroet. (1887), q.v., either because of uncertainty as to what Bonorden's genus really represents, or because *Platygloea* has been currently applied. Personally, I would not suggest the retention of *Platygloea* as a nomen conservandum.

[*Actinomyce* F. J. F. Meyen *in* Linnaea **2**: 442. 1827. — Type species (only original species): *Actinomyce horkelii* F. J. F. Meyen. This genus is sometimes cited as belonging to the Tremellaceae, and its name even listed as a doubtful synonym of *Tremella* Fr., for instance by Ainsworth & Bisby (Dict. Fungi 5. 1943). The true nature of the species is not yet established: it can be accepted with confidence, I believe, as non-basidiomycetous and perhaps even as non-vegetable. Compare also Von Heyden [*in* Linnaea **13** (Litt.): 51. 1839]. — Variant spellings: "*Actinomyces.* Meyer"; Riechenb., Consp. Reg. veg. 12. 1828. — "*Actinomyee*"; Streinz, Nomencl. Fung. 3. 1861.—An error. — "*Actinomycose*"; Lindau & Sydow, Thes. Litt. mycol. **2**: 96. 1909.— An error in the listed title of Meyen's publication. — Not to be confused with *Actinomyces* Harz (1878; Actinomycetales, Bacteria). The two names have been considered homonymous and *Actinomyces* has even been rejected on this account, for

instance by De Tony & Trevisan (*in* Sacc., Syll. Fung. **8**: 927. 1889): "*Nocardia* Trev. [1889] . . . *Actinomyces* Harz [1878] . . ., nec Meyen . . .."]

Actimomyces "Meyer"—See *Actinomyce.*

Actinomycose.—See *Actinomyce.*

Actinomyee.—See *Actinomyce.*

Agarico-gelicidium Paul., Traité Champ. **2**: Index. 1793 [for corresponding description and French name (Agaric-gelée), see *op. cit.* p. 96] (devalidated name). — Introduced for two species, treated in Paulet's subsequent "Iconographie" as members of *Tremella* L. They are (i) *Agarico-gelicidium villosum* Paul. = "*Tremella mesenterica.* Murray" = *Auricularia mesenterica* (Dicks. per S. F. Gray: Fr.) Fr. (Auriculariaceae) and (ii) *Agarico-gelicidium dentatum* Paul. = "*Tremella hydnoides.* Jacquin" = *Pseudohydnum gelatinosum* (Scop. per Fr.) P. Karst. — The first species is here selected as type. — Typonyms: *Zonaria* Roussel (1806; devalidated name), *Auricularia* Bull. per Mérat (1821), *Oncomyces* Klotzsch (1843), and *Patila* Adans. per O.K. (1891).

[*Agyrium* Fr., Syst. mycol. **1**: lv. 1821 (nomen nudum), "Typus *Agyrii* est *Trem. cinnabarrina.*" — When Fries first published this generic name (*l.c.*), he made it a genus of the "Tremellini." *Tremella cinnabarina* Bull. is a doubtful fungus and not a basidiomycete in my opinion. — When Fries (Syst. mycol. **2**: 231. 1822) validly published the generic name, he did not include *T. cinnabarina.* This second genus belongs to the Ascomycetes.]

[*Amphiphytum* Schw.; Reichenb., Consp. Regni veg. 12. 1828 (nomen nudum). — Reichenbach listed this (with a question-mark) as a genus of Tremellini, without any other indication except "Schwz." as the author. This must be considered a nomen nudum as long as no place of publication of a description can be found:

> "Where this genus was described and whether it is a North American genus we are unable to ascertain. It is referred to in [Endl. Gen. Pl. 35. 1840; Cda. Icon. **5**: 44. 1842, nomen] and also in Reichenbach, Conspect. Reg. Veg. 1828 as a doubtful genus but we have been unable to trace the name in Schweinitz, the author designated by Endlicher and Corda."—Farlow [Bibl. Ind. N. Amer. Fungi **1** (1): 212. 1909].

— Endlicher (Gen. Pl. 35. 1836) placed the name as a doubtful synonym of *Tremella* subgen. *Phyllopta* Fr. = *Phyllopta* (Fr.) Fr., q.v.]

Anthoseptobasidium J. Rick *in* Lilloa **9**: 215. 1943. — Etymology: ἄνθος, flower; the genus *Septobasidium.* Gender: n. — Type species (selected): *Anthoseptobasidium faquarae* J. Rick (Septobasidiaceae?): "Typus est in Collegio Anchieto Porto-Alegre sub nomine *Floricystidium.*"—J. Rick (*op. cit.* p. 216). — Scope. Introduced with two species, and a third one mentioned as probably belonging here. — Typification. The first species is selected as type.

Aporpium Bondarz. & Sing. *apud* Sing. *in* Mycologia **36**: 67. 1944; *apud* Bondarz., Trutovye Griby 36, 157. 1953. — Etymology: ἀ –, without; πόρπη, buckle, clamp. Gender n. — Type species (by original designation and only species mentioned): *Poria canescens* P. Karst. (Tremellaceae).—The tremellaceous nature of this species has been established by Teixeira & Rogers (*in* Mycologia **47**: 408-415. 1955), who also concluded that Karsten's species is a later synonym of *Poria caryae* (Schw.) Cooke. — Protonym: *Aporpium* Bondarz. & Sing. *in* Ann. mycol. **39**: 50. 1941.—Not validly published: no Latin description. Two species were mentioned and four more "unsicherer Position." — Scope. Apparently that of the protonym, but when the name was validly published, only the type species was mentioned. — Remark. The generic name is inapt as far as the type species proves to possess clamps.

[*Apyrenium* Fr., Summ. Veg. Scand. **2**: 470. 1849. — Type species (only original species): *Pyrenium lignatile* Fr. This is now supposed to represent the imperfect state of a species of Hypocreaceae. — This generic name is mentioned here because the genus was still included in the Hymenomycetes as late as 1874 by Fries (Hym. europ. 700; 'Tremellinei'); and even some later authors, for instance Killermann (*in* Engl. & Pr., Nat. Pfl. Fam., 2. Aufl., **6**: 123. 1928) and Clements & Shear (Gen. Fungi 343. 1931) dealt with it as a doubtful genus of Dacrymycetaceae.]

"*Arcanocarpus* McG."—Stevenson & Cash (*in* Bull. Lloyd Libr. No. 35: 34. 1936) listed this name as one of Lloyd's herbarium names for *Seismosarca alba* (Lloyd) Lloyd: incidental mention.

Archytidia.—See *Arrhytidia.*

Arrhitidia.—See *Arrhytidia.*

Arrhytidia Berk. & C. *in* Hooker J. Bot. & Kew Gdn Misc. **1**: 235. 1849.[1a] — ETYMOLOGY: *ἀ—*, without; *ῥυτίς, —ίδος*, wrinkle. Gender: f. — TYPE SPECIES (only original species): *Arrhytidia flava* Berk. & C. (Dacrymycetaceae). — According to Coker (*in* J. Mitchell sci. Soc. **35**: 166. 1920) Lloyd considered it "certainly co-generic and possible the same as *D*[*acrymyces*] *corticoides* [Ell. & Ev.]" The latter species is a synonym of *Dacrymyces involutus* Schw. Later on Coker (*in* J. Mitchel sci. Soc. **43**: 237. 1928) definitely accepted the three names as synonyms. Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 24. 1944], too, at first considered *A. flava* and *D. involutus* identical, but afterwards he thought them as probably distinct (Martin *in* Mycologia **41**: 85. 1949). For some notes and photographs, for instance of the type collection, see Lloyd (Mycol. Writ. **6**: 899 *fs. 1580, 1581.* 1919). — VARIANT SPELLINGS: "*Archytidia* Berk. et Curt." & "*Archytidia* Berk. (ex Cord.)"; Streinz, Nomencl. Fung. 131 & 726. 1862 (under "Agaricini Fr.").—Evidently an unintentional error. — "*Arrhitidia*"; *in* Rev. mycol. **11**: 56. 1889. (incidental mention).—An error.

Atkinsonia "McGinty"; Lloyd, Mycol. Writ. **5**: 576 footnote. 1916 (not validly published); see also Stevenson & Cash (*in* Bull. Lloyd Libr. No. 35: 30. 1936). — Since the publishing author did not definitely accept this name it was not validly published. For some general remarks on the McGinty names, see Part I of the present series (Donk *in* Reinwardtia **1**: 205. 1951).

> "Lloyd points out that non-resupinate species of *Sebacina* such as *S. amesii*, would according to some views form the basis of a separate genus, for which he [as McGinty] suggests the name *Atkinsonia.* His specimens, however, were filed as *Sebacina.* In a later discussion of *S. amesii* he states [*op. cit.* p. 755]: 'As to generic name it might be changed on a strict limitation of *Sebacina* to resupinate species, on the same principle that *Tremellodendron* was proposed, but I should consider it an artificial classification.' "—Stevenson & Cash (*l.c.*).

Introduced in connection with *Sebacina amesii* Lloyd (*l.c.* & *fs. 810-813*; *op. cit.* p. 755 *f. 1130.* 1918) (Tremellaceae). McGuire (*in* Lloydia **4**: 12. 1941) suggests that this species probably represents a luxuriant form of *Sebacia incrustans* (Pers. per Fr.) Tul.; Martin [*in* Stud. nat. Hist. Uuiv. Iowa **19** (3): 53. 1952] cites it without comment as a synonym of *S. incrustans.*

[*Atractiella* Sacc. *ex* Sacc., Syll. Fung. **4**: 578. 1886. — Type species (only original species): *Atractium brunaudianum* Sacc. This might be a species of the Auriculariaceae: compare Juel [*in* Bih. svenska Vetens-Akad. Handl. **24** III (9): 6-7 footnote. 1898]. — The generic name was published at an earlier date as a provisional name as follows: *Atractium (Atractiella) brunaudianum* Sacc., "... haec species a genere *Atractio* satis recedit et merito in genus proprium, *Atractiella,* erigo potest."—Saccardo (*apud* Sacc. & Malbranche, Fung. gallic., Ser. V *in* Atti Ist. veneto VI **1**: 1280. 1883).]

Atractobasidium G. W. Mart. *in* Bull. Torrey bot. Cl. **62**: 340. 1935. — ETYMOLOGY: *ἄτρακτος*, spindle; basidium. Gender: n. — TYPE SPECIES (only original species): *Atractobasidium corticioides* G. W. Mart. (Tremellaceae or Auriculariaceae).—For the correct name of this species, see under *Patouillardina.* — TYPONYMS: *Patouillardina* Bres. apud J. Rick (1906) and *Protograndinia* J. Rick (1933).

Auricula.—See *Auricularia.*

"*Auricula* Batt."—See under *Auricula* O.K.

Auricula O.K., Rev. Gen. Pl. **2**: 844. 1891 (nomen nudum). — O. Kuntze published the name "*Auricula* Batt." for the genus *Hirneola* Fr. (1848) as compiled in Saccardo's

[1a] The title of the paper reads: "Decades of Fungi: by the Rev. M. J. Berkeley, M. A., F. L. S. / (Continued from p. 104) / Decades XXIII. and XXIV. / North and South Carolina Fungi; by the Rev. M. J. Berkeley and the Rev. M. A. Curtis." Thus the publishing authors are Berkeley & Curtis rather than Berkeley alone as is often cited.

"Sylloge,"[2] evidently with "*Auricula Judae* Batt." (see below) = *Hirneola auricula-judae* (Bull. per St.-Am.: Fr.) Berk. (Auriculariaceae) as type species. He did not add a description and the citation of "*Auricula* Battara (1755) fungi agri 26 t. 3 fig. F. c. syn. *Auricula Judae vulgo* etc." does not constitute a valid reference, as will be presently demonstrated; hence the name *Auricula* was not validly published by Kuntze. — There is no generic name '*Auricula* Batt.' First, Battara did not distinguish between genera, although several authors have interpreted certain words used by him as generic names (see also Donk *in* Bull. bot. Gdns Buitenzorg III **18**: 370-371. 1949 for some general remarks on this question). Secondly, in this particular case, there is in Battarra's work no description at all of a group of higher rank than a species to refer to in this connection, and hence Kuntze's quoted reference, which is to a description of a species, is valueless. Of the species Battarra placed in his 'class' "Fungi membranacei," one was called *Auricula Simii* (perhaps a species of *Exidia?*) and an other, "*Fungus membranaceus auriculam ref. sive sambucinus* C. B. 372." This latter name was followed by a vernacular name (the whole work is written in Latin): "Auricula Judae vulgo." This second species is the well-known Judas's ear. In view of these facts it is absurd to distil a genus '*Auricula* Batt.' as was done by Kuntze, or even a species that Battarra had called '*Auricula Judae.*' — Even if *Auricula* O.K. would be validly published (instead of being a nomen nudum) it would be impriorable on account of some earlier homonyms: *Auricula* Hill (1756; Primulaceae), *Auricula* Spach (1840; Primulaceae),[3] and *Auricula* Castr. (1873; Naviculaceae, Bacillariophyceae). *Auricula* Lloyd (1922; "Thelephoraceae") is a later homonym.

Auricula Lloyd.—See "Thelephoraceae."

Auricularia Bull. *per* Mérat, Nouv. Fl. Env. Paris, 2e Ed., **1**: 33. June 1821; Purton, App. Midl. Fl. **3**: 523. After Sept. 4, 1821. — Etymology: auricula, small ear. Gender: f. — Type species (selected): *Auricularia tremelloides* Bull. = *A. mesenterica* (Dicks. per S. F. Gray: Fr.) Fr. (Auriculariaceae).

Devalidated name: *Auricularia* Bull.; Jussieu, Gen. Pl. 4. 1789; Bull., Hist. Champ. France 277. 1791.—Bulliard, the originator of this name, first used it as the generic appellation in specific names on some of his plates.[4] The first to supply a generic description was A. L. de Jussieu (*l.c.*), who did not mention any species; he ascribed the name to Bulliard. Shortly afterwards Bulliard himself (*l.c.*) treated *Auricularia* in a comprehensive manner, listing "*Auricularia* A. Juss." as a synonym, and admitting seven species. The first of these is *Auricularia tremelloides* = *Auricularia mesenterica*, and the fourth, *A. reflexa* Bull., a very inclusive species, but undoubtedly to be reduced to *Stereum hirsutum* (Will. per Fr.) S. F. Gray. In this connection it must be emphasized that Bulliard included the common Judas's ear, *Tremella auricula-judae* Bull. = *Hirneola auricula-judae* (Bull. per St.-Am.: Fr.) Berk., in a different genus! He put it first in *Tremella* L. and afterwards in *Peziza* L. As to the type species, the two most eligible of the original species are *A. tremelloides* and *A. reflexa*. Both are about equally eligible and both have been selected as type and will be discussed below. It would seem preferable for various reasons to agree upon *A. tremelloides*, which was the first to be chosen and it is here accordingly accepted for *Auricularia* as published by De Jussieu and Bulliard.

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[2] "= *Auricularia* Link 1809 non †Bull. = *Hirneola* Fries 1825 ... Saccardo syll. VI 764-770. ..." For '*Hirneola* Fries 1825' read '*Hirneola* Fries 1848'; '*Auricularia* Link' is not a different genus from *Auricularia* Bull., but merely an emendation (see p. 169).

[3] Spach ascribed this name to De Tournefort. However, the generic name published by that author was *Auricula ursi*. Spach did not refer to the previously published names *Primula* sect. *Auricula* Gaudin (Fl. helv. **2**: 58. 1828) or *Auricula* Hill (Brit. Herb. 98. 1756).

[4] Bulliard's plates ("Herbier de la France") of the species of *Auricularia* appeared before the publication of the text ("Histoire des Champignons de la France"). At the bottom of each plate a description was furnished beside the French and Latin names. The first three plates are those of (i) *Auricularia reflexa* Bull. (*pl. 274.* 1785), (ii) *A. caryophyllaea* Bull., a species of *Thelephora* Ehrh. ex Fr. (*pl. 278*), and (iii) *A. tremelloides* Bull. (*pl. 290.* 1786). One might argue that with the issue of the first plate Bulliard published a monotypic genus accompanied by a descriptio generico-specifica, but this was certainly not his intention.

The first author to emend *Auricularia* was Link. He mentioned it twice in the same year, keeping it distinct from both *Thelephora* "Pers." and *Stereum* Pers. sensu Link (= *Hymenochaete* Lév. plus *Lloydella* Bres.) and thus considerably reducing its contents. On the first of these occasions [*in* Neues J. Bot. **3** (1 & 2): 15-16. 1809] he stated, "Hujus loci est *Thelephora mesenterica* Pers. et affinis species e Lusitania." This clearly shows, I believe, that he considered the species mentioned by name as type; it is also the only one of Bulliard's original species that he retained in the genus. On the second occasion (*in* Mag. Ges. naturf. Fr. Berlin **3**: 42. 1809) he stated, "Hujus loci *Tremella Auricula,* nec non *Thelephora mesenterica* ..."; these species he would also call *A. judae* Link and *A. mesenteriformis* Link. '*Auricularia* Link' (of the second publication) has often been treated as a different name from *Auricularia* Bull., but it is rather an application of Bulliard's name.[5]

The incorporation by Link of *Tremella auricula,* with its specific epithet so strongly resembling the generic name, led many authors to associate it more intimately with the generic name, rather than to regard one of Bulliard's species as the type. Compare, for instance, Persoon (Traité Champ. comest. 73. 1818): "Le genre *Auricularia* (Auriculaire), qui a pour type l'oreille de Judas, ou le *Peziza Auricula* (Bull. t. 427. f. II) ... avec lequel on réunira le *Thelephora mesenterica,* ou *tremelloides* DeC. (*Auricularia tremelloides* Bull., t. 290)."

Scope. Mérat (and Purton) took up Bulliard's name in practically its original sense. They deliberately substituted it for *Thelephora* Ehrh. as applied by Persoon (Syn. Fung. 565. 1801) and De Candolle. Both *A. tremelloides* and *A. reflexa* are represented among their species. Mérat's first species is *Auricularia caryophyllaea* Bull. ("*cariophyllea*").[6]

Typification. The first author who (after 1821) indicated a type species for *Auricularia* as conceived by Bulliard and taken up by Mérat was Brongniart (*in* Dict. Sci. nat. **33**: 577. 1824; Essai Classif. nat. Champ. 88. 1825); at the same time he restricted the name (no author cited) to "l'*Auricularia mesenteriformis* de Link" = *A. mesenterica.*[7]

Other authors to suggest, choose, or accept *A.* (or *Thelephora*) *mesenterica* or *A. mesenteriformis* as the type species are Clements & Shear (Gen. Fungi 341. 1931, for *Auricularia* Bull. "1795"), Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 156, 162. 1941, for *Auricularia* Bull. "ex Secr." 1833; ibid. **18**: 90, 93. 1949, for *Auricularia* Bull. "ex Brongniart 1824"; *in* Reinwardtia **1**: 498. 1952, for *Auricularia* Bull. per Mérat), and Martin [*in* Amer. Midl. Nat. **30**: 81. 1943; *in* Stud. nat. Hist. Univ. Iowa **18** (3): 65. 1944, for *Auricularia* "Pers." 1822; *in* Stud. nat. Hist. Univ. Iowa **19** (3): 91. 1952, for *Auricularia* Mérat].

The next author to designate a type species was Fries (Syst. Orb. Veg. 82. 1825); he chose *Stereum hirsutum* (*A. reflexa*) and emended *Auricularia* Bull. to equal *Stereum* Pers. (with the exclusion of what was later to be called *Hymenochaete* Lév.). Since this selection is of a later date than Brongniart's in 1824 and not accepted in Fries's "Systema" it may be disregarded.

Since the Judas's ear is not among Bulliard's and Mérat's species the selection of that species is out of question. It has already been mentioned above that Persoon, in 1818, considered "*Peziza auricula* (Bull. t. 427. f. II)" as type species of *Auri-*

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[5] Throughout Link's treatise no author's citations were given after the generic names.

[6] Mérat was not the only author who thought *Auricularia* Bull. and *Thelephora* to be synonymous and who preferred the former name for the inclusive genus. An example is Purton (Bot. Descr. Brit. Pl. **2**: 679. 1817) and still earlier, Poiret (*in* Lam., Encycl. méth., Bot. **7**: 619. 1806), who originally could not make up his mind and called it "Théléphore ou Auriculaire. *Thelephora,* Willd. Pers. *Auricularia,* Lam.," but afterwards decided upon *Auricularia* (Poiret *in* Lam., Encycl. méth., Bot., Suppl. **1**: 546. 1810), referring to *Thelephora* in the previous volume; the name was also used in the explanation to the plates (Lam., Tabl. encycl., Bot., Ill. Genres **3**: 492. 1823), and on the plate illustrating the genus (Lam., Rec. Planches Bot. Encycl. **4**: *pl. 886.* 1800). The plate depicts *A. caryophyllaea* Bull. (now referred to *Thelephora* Ehrh. ex Fr.) and *A. reflexa* Bull. (*Stereum hirsutum*); both figures were copied from Bulliard.

[7] And compare Brongniart (*in* Dict. Sci. nat. **33**: 570. 1824) under *Exidia* Fr.: "suivant Fries, le genre *Auricularia,* qui doit rester parmi les vrais champignons auprès des Théléphores, est très-distinct de celui-ci, et a pour type l'*Auricularia mesenterica,* Link."

cularia [sensu Link]. He was followed in 1822 by Brongniart (*in* Dict. class. Hist. nat. **2**: 85. 1822), who indicated that species in exactly the same notation as previously used by Persoon. Brongniart differentiated between *Auricularia* Bull., which to him (in 1822) was a synonym of *Thelephora,* and *Auricularia* Link, "l'autre auquel Link a donné depuis ce nom [d'*Auricularia*]," which he accepted, adding, "Le type de ce genre est la *Peziza Auricula* Bull. T. 427 f. II." A few years later, in 1824, Brongniart changed his mind, took up *Auricularia* Bull., and restricted it to the species he indicated expressly as the type of that name, *A. mesenterica* (see above). The indication of *Peziza auricula* conflicts to some degree with Brongniart's generic description, which contains, "... membrane ..., qui est appliquée par une grande partie de sa surface postérieure sur les troncs des Arbres ...." With such a description one would rather have expected *A. tremelloides!* The following year Brongniart (*in* Dict. class. Hist. nat. **3**: 461. 1823) once more admitted a genus "*Auricularia,* Link" (name listed only). The designation of the Judas's ear is prior to the one in 1824 when *A. mesenterica* was indicated. This seems not to impair the claims of the latter species, first, because the former was appointed for a name, *Auricularia* [sensu Link], which was emphatically considered at the time of the selection to be a different one from *Auricularia* Bull.; secondly, it was not among Bulliard's original species; and, thirdly, when the Judas's ear was appointed, *Auricularia* Bull. was revalidated shortly before also with the exclusion of the Judas's ear. So that species can never be accepted as type of *Auricularia* Bull. per Mérat.

Monadelphous homonyms and misapplications. Since the starting-point date for these fungi (Jan. 1, 1821) the name *Auricularia* has been applied to at least four different genera.

(i) With *A. tremelloides* (*A. mesenterica*) as type species = *Auricularia* Bull. per Mérat = *Oncomyces* Klotzsch.—A few years after the valid re-publication of the generic name *Auricularia* Bull. by Mérat, Brongniart (*in* Dict. Sci. nat. **33**: 577. 1824; Essai Classif. nat. Champ. 88. 1825) typified and restricted that name to *A. mesenterica* (see above). The next authors to accept this application (perhaps independently) were Duby (Bot. gall. **2**: 773. 1830), who included one species, *A. mesenterica,* and referred the Judas's ear to *Exidia* Fr.; and Fries (Fl. scan. 340. 1835; Gen. Hym. 14. 1836; Epicr. 555. 1838), who included *A. mesenterica* and a related species (now generally considered to be only a form of the first). Due to Fries's enormous influence this became the current application of the name *Auricularia*—with the exclusion of *Tremella auricula!* (Previously, Fries applied the name differently: see below.) — Compare also foot-note 11.

(ii) With *Tremella auricula* (*T. auricula-judae, A. sambuci* Pers.) as type species = *Hirneola* Fr. 1848.—As far as I have been able to ascertain, *Auricularia* [sensu] Link was taken up in 1822 by Persoon (Mycol. europ. **1**: 97)[8] and by (Brongniart (*in* Dict. class. Hist. nat. **2**: 85).[9] Brongniart (1822, not 1824) cited Link as the author and defined the genus in close agreement with Link. He differentiated between *Auricularia* Bull., which to him (in 1822) was a synonym of *Thelephora,* and *Auricularia* "Link," which he accepted. Brongniart (1822) was also careful to mention the type species: "*Peziza Auricula* (Bull. T. 427 fig. II)." He further included *A. tremelloides* and introduced as new elements *Tremella* (= *Exidia*) *glandulosa* Bull. and a tropical species described by Bory-de-St.-Vincent (the latter species afterwards to be included by Fries in *Hirneola* Fr. 1848). — In the same year (1822), Persoon's "Mycologia europaea" appeared, in which, it is true, he did not indicate a type species, as he did in his previous work, but his genus *Auricularia* had the same circumscription (that is, the one given to it by Link) already previously adopted by Persoon (1818), its species being *A. mesenterica* and *A. sambuci* Pers. = *Hirneola auricula-judae.* As we have seen, Persoon emphatically designated in 1818 the Judas's ear as the type species. There is not the slightest indication that he had changed his mind. Martin's selection (*ll.cc.*, 1943, 1944) of *Thelephora mesenterica* "Bolt." = *A.*

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[8] In the same year (1822) Dierbach's translation of Persoon's "Traité sur les Champignons comestibles" appeared. It contains a faithful translation of all what was said about *Auricularia* in 1818. For some remarks on this German issue (Verh. essb. Schwämme), see Part III ("Clavariaceae," under *Xyloglossum*; Donk *in* Reinwardtia **2**: 492. 1954).

[9] This Volume of the "Dictionnaire" appeared at the end of the year 1822 or perhaps even in 1823. It is announced in the "Bibliographie de la France" of 1823 (p. 2), in the first issue dated January 4.

mesenterica "Pers." for *Auricularia* "Pers." 1822 is not in agreement with Persoon's own view on this matter voiced a few years before the latter date. Subsequent authors to accept *Auricularia* in Link's sense (including both *A. mesenterica* and *Hirneola auricula-judae*) are, for instance, Secretan (Mycrogr. suisse **3**: 288. 1833) and Link (Handb. Gewächse **3**: 338. 1833). These authors did not indicate what they regarded as type species, but they doubtlessly based their conceptions on the treatment by Persoon (Secretan), or on Link's work of 1809 (Link).

(iii) With *Stereum hirsutum* (*A. reflexa* Bull.) as designated type species = *Stereum* Pers. per S. F. Gray.—This is one of Fries's applications of the name (Syst. Orb. Veg. 82. 1825). Afterwards he changed his mind and adopted *Auricularia* for a different genus, with *A. mesenterica* as the leading species (see above).

(iv) With a species of *Exidia* as type species. = *Exidia* Fr.—Fries's first use of the name *Auricularia* (*in* Liljeblad, Utkast svensk Flora, Uppl. 3, 608. 1816; no author cited) is for a genus comprising only one species, *Auricularia judae* (*Peziza auricula* L.), which may have been compiled from literature and may represent (substratum!) the true Judas's ear. — However, when Fries returned to it in his "Systema" (**2**: 221. 1822) it is clear that the species he then described under the name of *Exidia auricula-judae* is a mixture of the true Judas's ear (compiled from literature) and of a species of *Exidia* Fr., which was studied from specimens (description!); compare Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 161-162. 1941).[10] See also Fries's use in a "Conspectus ordinum" (Syst. mycol. **1**: 2. 1821; name only) where he listed *Auricularia* as an example of Tremellinae.[11] He soon replaced the name, substituting it by *Exidia*, transferring what he thought to be the Judas's ear to that genus and shifting the accent to species better known to him; he thereafter applied *Auricularia* to two other genera, first with *Stereum hirsutum* as the type species (1825) and later with *Thelephora mesenterica* (from 1835 onward). — Wahlenberg (Fl. suec. **2**: 993. 1826) may well have studied the same collection of Fries's as far as what he supposed to be the Judas's ear is concerned. He did not accept the newly introduced name *Exidia*, but replaced it by "*Auricularia*. Link," thus apparently considering '*Auricularia Judae*' as the type species. *Auricularia* of Wahlenberg is clearly synonymous with *Exidia*: the three species he included belong to that genus (*A. judae* as to specimens that induced their transfer to *Exidia*) and the generic description contained, "Receptaculum ... supra tantum fructificans papillis duriusculis."

Remarks. Donk (*in* Bull. bot. Gdns Buitenzorg III **18**: 89-93. 1949) moved to conserve *Auricularia* Bull. per Brongn. (1824; type species, *A. mesenterica*) against *Auricularia* Brongn. (1822; Pers. 1822; type species, *T. auricula*); this proposal replaced an earlier one by the same author.[12] Unaware of Mérat's "Flora," he thought that in agreement with the present wording of Art. 13 (f), *Auricularia* as re-published in 1822 was the first valid re-publication of this name and that its correct application would be with *Hirneola auricula-judae* as the type species. As already may have been gathered from the preceding lines, there was no disagreement among modern authors that in view of common usage *A. mesenterica* was the preferable type species. Those authors who believed this species and *H. auricula-judae* to be generic-

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[10] *Hirneola auricula-judae* is exceedingly rare in Sweden: besides the collection distributed by Lundell & Nannfeldt, I came across a specimen in Thunberg's herbarium at Upsala ("*Peziza auriculata* /. . . e Suecia. Th."), thanks to Dr. J. A. Nannfeldt's help. Linnaeus had mainly the true *H. auricula-judae* in mind (literature).

[11] It was apparently this Friesian taxon that Agardh (Aphor. bot. 82. Dec. 1821) listed as "*Auricularia* Lk." (name only).

[12] The earlier—and withdrawn—proposal (Donk *in* Bull. bot. Gdns Buitenzorg III **17**: 156, 160-163. 1941) suggested the conservation of *Auricularia* Bull. per Secr. (1833; type species, *A. mesenterica*) against *Auricularia* Bull. ex Fr. (1825; type species, *Stereum hirsutum*), *Auricularia* Wahlenb. (1826; type species, *Exidia sp.*), and *Laschia* Fr. (1830). A changed interpretation of Art. 13 (f), subsequently adopted by the Stockholm Congress, as well as additional literature that came to the author's attention, lead to the replacement of this proposal by the above one. Compare also the discussion in relation to this earlier proposal by Martin (*in* Amer. Midl. Nat. **30**: 77-82. 1943) and Donk (*in* Bull. bot. Gdns Buitenzorg III **18**: 91-93. 1949); and see also Rogers (*in* Farlowia **3**: 434. 1949).

ally different—as I do—would have to substitute *Auricularia* for *Hirneola* Fr. (1848), q.v., and take up *Oncomyces* Klotzsch for the genus represented by *A. mesenterica,* a very disturbing situation, not so keenly felt by others who combined the two genera and who would apply *Auricularia* to the combination whichever of the two species were to be considered type. However, when Lowy (*in* Mycologia **43**: 462-463. 1951) pointed out that *Auricularia* Bull. was already re-published by Mérat in 1821 the proposal became superfluous and Donk (*in* Reinwardtia **1**: 497. 1852) withdrew it, after having satisfied himself that *Auricularia* Bull. per Mérat could not be typified by *H. auricula-judae.*

VARIANT SPELLING: "*Auricula*"; *in* Bull. Soc. mycol. France **71**: xii. 1955.—Used in a list of species in the specific combination "*Auricula mesenterica.*" Evidently an error. — TYPONYMS: *Agarico-gelicidium* Paul. (1793: devalidated name), *Zonaria* Roussel (1806; devalidated name), *Oncomyces* Klotzsch (1843), and *Patila* Adans. per O.K. (1891). — *Conchites* Paul. (1793; devalidated name) and *Auricula* O.K. (1891; not validly published) are based on *Hirneola auricula-judae.*

Auriculariella (Sacc.) Clem., Gen. Fungi 103. 1909. — ETYMOLOGY: diminutive of *Auricularia.* Gender: f. — TYPE SPECIES (selected): *Laschia delicata* Fr. (Auriculariaceae). — BASINYM: *Laschia* [subgen.] *Auriculariella* Sacc., Syll. Fung. **6**: 407. 1888.—This is Saccardo's name for *Laschia* Fr., q.v., in its original delimitation, a genus that had grown considerably in the course of time, and finally covered extremely diverse elements. Apparently this subgeneric name might well be regarded as an isonym of *Laschia* Fr. — It must be mentioned that Saccardo in the same work (*op. cit.* p. 761) also entered '*Auriculariella*' as if it were a generic name, but his formal use on page 407 leaves no doubt that he definitely accepted it as a subgeneric epithet only. — SCOPE. Clements did not alter Saccardo's circumscription. — TYPIFICATION. Since *Auriculariella* represents the original genus *Laschia* Fr., I would prefer to select as the type species *Laschia delicata* Fr. = *Hirneola delicata* (Fr.) Bres. — Clements & Shear (Gen. Fungi 341. 1909) suggested *Laschia tremellosa* Fr.; it is often considered to be identical with *L. delicata.* — REMARK. Clements incorrectly ascribed the generic name to Saccardo. — TYPONYM: *Laschia* Fr. (1830).

Basidiodendron J. Rick *in* Brotéria (Sér. Ci. nat.) **7**: 74. 1938. — ETYMOLOGY: basidium; *δένδρον* tree. Gender: n. — TYPE SPECIES (only original species): *Basidiodendron luteogriseum* J. Rick (Tremellaceae).—Described without the septa in the basidia being noted. A specimen in the Farlow Herbarium shows the species to be tremellaceous. Martin [*in* Stud. nat. Hist. Univ. Iowa **19** (3): 52. 1952] listed the type species as a synonym of *Sebacina caesiocinerea* (Höhn. & L.) D. P. Rog. — TYPONYM. See under *Metabourdotia* L. Olive.

Bonia Pat. *in* Bull. Soc. mycol. France **8**: 48. 1892. — ETYMOLOGY: R. P. Bon. Gender: f. — TYPE SPECIES (selected): *Bonia papyrina* Pat. (Tremellaceae).—According to Patouillard (*in* Bull. Soc. mycol. France **10**: 76. 1894) this species "doit être considéré comme une simple forme de l'*Heterochaete tenuicula* (Lév.) Pat." — SCOPE & TYPIFICATION. *Bonia papyrina* was the only species fully described when the genus was established. A second species was casually mentioned as follows: "*Hydnum flavum* Berk. doit être rapporté au genre *Bonia.*" This remark makes it clear that the latter species can not be regarded as the type, for one would never deal in this way with a species standing foremost in one's mind when publishing a genus. This leaves *Bonia papyrina* as the most eligible species. — REMARK. The later introduction of *Mycobonia* Pat. ("Thelephoraceae"), q.v., is not that of a mere isonym, but rather of a new genus with a different type species. — HOMONYM: *Bonia* Balansa (1890; Gramineae). — STATUS. Impriorable on account of the earlier homonym.

Botryochaete Corda, Icon. Fung. **6**: 47. 1854. — ETYMOLOGY: *βότρυς, —υος,* bunch of grapes; *χαίτη,* hair. Gender: f. — TYPE SPECIES (by original designation and only original species): *Onygena faginea* Fr. per Fr. (Auriculariaceae). — VALID PUBLICATION. According to the introduction to the sixth part of Corda's "Icones," the plates of this part were already distributed to correspondents in 1846. On plate 9 (*f.* 95) one will find the names "*Botryochaete*" and "*B. faginea*" accompanying illustrations of the only species assigned to the genus. This does not provide for the valid publication of the generic name in 1846 because this monotypic genus was not based on a new species (Art. 41). The illustration shows several errors of observation. The text

to the plates was published posthumously and made ready for the printer's by Zobel. — TYPONYMS: *Phleogena* Link (1833) and *Ecchyna* Fr. ex Boud. (1885).

[*Botryonipha* Preuss.—See under *Stilbum.*]

Bourdotia (Bres.) Trotter *in* Sacc., Syll. Fung. **23**: 571. 1925. — ETYMOLOGY: H. Bourdot. Gender: f. — TYPE SPECIES (only original species of basinym): *Sebacina galzini* Bres. (Tremellaceae). — BASINYM: *Sebacina* subgen. *Bourdotia* Bres. *in* Ann. mycol. **6**: 46. 1908.— Introduced for one species, *Sebacina galzini.* — VALID PUBLICATION. The generic name is now currently attributed to Bresadola & Torrend [*apud* Torrend *in* Brotéria (Sér. bot.) **11**: 88. 1913]. These authors described a new species of the name *Bourdotia caesia* Bres. & Torrend and added in a note this remark: "Obs.—*Bourdotiae Galzinii* Bres. affinis sed notis datis bene distincta." Obviously this does not constitute a valid publication of the generic name. As far as I could ascertain, the first to ensure its valid publication was Trotter, who furnished a generic description as well as a reference to the basinym; he ascribed the generic name to "Bres. . . . 1908." — Previous to the publication in the "Sylloge Fungorum" the word *Bourdotia* was used in specific combinations without being validly published as a generic name, as when the name *Bourdotia caesia* was published: compare Bourdot & L. Maire (*in* Bull. Soc. mycol. France **36**: 71. 1920, "*Bourdotia*" *cinerella* Bourd. & G., but in observation, "section *Bourdotia*"). — SCOPE. Trotter included the first two species mentioned above.

[*Calloria* Fr., Fl. scan. 343. 1835. — Type species (selected): *Peziza fusarioides* Berk.; compare Nannfeldt [*in* Nova Acta Soc. Sci. upsal. IV **8** (2): 192. 1932]. — A genus formerly treated as belonging to the "Tremellinei." The type species is an ascomycete and it was placed by Von Höhnel in the Dermateaceae (Helotiales).]

Calocera (Fr.) Fr., Syst. Orb. Veg. 91. 1825; Elench. **1**: 233. 1828. — ETYMOLOGY: *καλός*, beautiful; *κέρας*, a horn, Gender: f. — TYPE SPECIES (selected): *Clavaria viscosa* Pers. per Fr. (Dacrymycetaceae). — BASINYM: *Clavaria* subgen. *Calocera* Fr., Syst. mycol. **1**: 485. 1821.—Introduced for six species of which *Clavaria viscosa* is the first. — SCOPE. That of the subgenus. — TYPIFICATION. *Calocera viscosa* was apparently the species best known to Fries: "Lignatiles, fulvae l. luteae, sed sporidia alba videntur, saltim *Cl. viscosae* &c." (1821). It was suggested as the type species by Clements & Shear (Gen. Fungi 342. 1931) and also selected by Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 29. 1944] and other authors. — VARIANT SPELLING: "*Caloceras* Fr."; Wallr., Fl. germ. Crypt. **2**: 534. 1833; Corda, Icon. Fung. **5**: 41, 81. 1842; Anl. Mycol. civ, 172. 1842. — REMARK. With *Clavaria cornea* Batsch per Fr. as its type species, *Corynoides,* S. F. Gray (1821) is a metonym of *Calocera* in the now established circumscription and *Calocera* has been proposed as a nomen conservandum against *Corynoides* by Donk (*in* Bull. bot. Gdns Buitenzorg III **18**: 114. 1949; in Taxon **3**: 75. 1954). See also under *Corynoides.* The proposal is herewith withdrawn since it is superfluous: by the publication of the generic name *Calocera* in the "Elenchus," a part of the starting-point book, that name takes precendence of *Corynoides.*

Caloceras.—See *Calocera.*

Calopposis Lloyd, Mycol. Writ. **7**: 1339. 1925. — ETYMOLOGY: *καλός*, beautiful; opposi(tu)s, opposite? Gender: f. — TYPE SPECIES (only original species): *Calopposis nodulosa* Lloyd (Dacrymycetaceae). — VALID PUBLICATION & SCOPE. Descriptio generico-specifica. On the following page, but disconnected from the publication of the generic name, a second species was described.

Campylobasidium Lagerh. *ex* F. Ludwig, Lehrb. nied. Krypt. 474. 1892. — ETYMOLOGY: *καμπύλος*, bent; basidium. Gender: n. — TYPE SPECIES: not mentioned by name (Septobasidiaceae).—As a very timid guess I have suggested that the fungus involved might perhaps be *Septobasidium lagerheimii* Couch. — VALID PUBLICATION & SCOPE. The first effectively published appearance of the name seems to be the following one:

> "Neuerdings hat nun v. Lagerheim eine saprophytische Auriculariaceengattung, *Campylobasidium*, entdeckt, welche wie die Rostpilze eine Art Teleutosporen, also Chlamydosporen hat, aus denen bei der Keimung die quergetheilten Basidien entstehen, ..."—Ludwig (*l.c.*).

This is all, no species was mentioned. The differential description by which this name

must be considered as validly published, is very short, but, I believe, sufficient. — Remark. Patouillard (Essai taxon. Hym. 10. 1900) gave *Campylobasidium*, as well as *Podobasidium* Lagerh., as synonyms of what he called *Septobasidium* B. *Gausapia* Fr. — Nomen rejiciendum. See under *Septobasidium*.

[*Ceracea* Cragin *in* Bull. Washburn Coll. Lab. nat. Hist. **1**: 82. 1885 (*n.v.*; reproduced *in* J. Mycol. **1**: 58. 1885).[13] — Type species (only original species): *Ceracea vernicosa* Cragin.—This species was for a long time interpreted as a strictly resupinate species of the Dacrymycetaceae, but Martin (*in* Mycologia **41**: 77-80. 1949), after studying the type specimen, concluded that it was an imperfect fungus "to be classed with the Moniliaceae, possibly near *Monosporium*." The earlier, tentative suggestion by Brasfield (*in* Lloydia **3**: 107-108. 1940) that "*Ceracea Lagerheimii* Pat. (Bull. Soc. Myc. Fr. **9**: 141. 1893) be considered as the type species in as much as Cragin's type, *C. vernicosa*, has apparently been lost," has thus become doubly untenable. — The name *Cerinomyces* G. W. Mart., q.v., was introduced for the genus that for some time was called *Ceracea*.]

Ceratabasidium D. P. Rog.—See "Thelephoraceae."

Cerinomyces G. W. Mart.—See "Thelephoraceae."

[*Cladosterigma* Pat. apud Pat. & Lagerh.—See "Clavariaceae."]

Clavariopsis Holterm., Mykol. Unters. Tropen 85. 1898. — Etymology: the genus *Clavaria*; ὄψις, appearance. Gender: f. — Type species (only original species): *Clavariopsis pinguis* Holterm. (Tremellaceae). — Homonym: *Clavariopsis* De Wildem. (1895; Moniliales, Deuteromycetes). — Isonym: *Holtermannia* Sacc. & Trav. (1910), q.v. — Status. Impriorable on account of the earlier homonym and for this reason replaced by the isonym.

Collodendron Clem., Gen. Fungi 104. 1909. — Etymology: κόλλα, glue; δένδρον, tree. Gender: n. — Type species (same as of basinym): *Merisma candidum* Schw. (Tremellaceae).—For this species, see under *Tremellodendron*. — Basinym: *Tremellodendron* Atk. (1902), q.v. — Remark. A superfluous name change, introduced for linguistic reasons.

Collopezis Clem., Gen. Fungi 103. 1909. — Etymology: κόλλα, glue; *pezis*, an ancient form of the name *Peziza*. Gender: f. — Type species (same as of basinym): *Tjibodasia pezizoides* Holterm. (Auriculariaceae). — Basinym: *Tjibodasia* Holterm. (1898), q.v. — Remark. A superfluous name change, introduced for linguistic reasons.

Collyria Fr.—See "Agaricaceae."

Conchites Paul., Traité Champ. **2**: Index. 1793 [for corresponding description and French name (Conque-oreille), see *op. cit.* p. 396] (devalidated name). — Introduced for seven species, distributed in Paulet's subsequent "Iconographie" over *Peziza* L. (four species), *Tremella* L. (one), *Fungoides* Tourn. (one), and *Omoriza* Paul. (one). The first species, here selected as the type, is *Conchites auricula-judae* Paul. = "*Peziza auricula*" (Iconogr.) = *Hirneola auricula-judae* (Bull. per St.-Am.: Fr.) Berk. (Auriculariaceae). — Typonym: *Auricula* O.K. (1891; not validly published and preoccupied).

[*Corallomorpha* Opiz *in* Lotos **6**: 106. 1856. — Introduced with two species of which the first, *Corallomorpha schoblii* Opiz, is the logical type species. — Opiz thought that the genus "sich an die Fries'sche Gattung *Calocera* [Dacrymycetaceae] anschlieset," but it seems more likely to belong to the Deuteromycetes. Listed by W. B. Cooke (Gen. Homobas. 25. 1953) as a genus of Thelephoraceae. A nomen dubium, and rather not pertaining to the basidiomycetes.]

Corticioides "McGinty"; Lloyd, Mycol. Writ. **3** (Old Spec.): 10 footnote. 1908 (not validly published); see also Stevenson & Cash (*in* Bull. Lloyd Libr. No. 35: 30. 1936). — *Corticioides* was coined in connection with *Tremella clavarioides* Lloyd = *Tremella reticulata* (Berk.) Farl. (Tremellaceae). — Not definitely accepted by the publishing author and hence not validly published. For some general remarks on the McGinty names, see Part I of the present series (Donk *in* Reinwardtia **1**: 205. 1951).

[13] Compare Atwood (*in* Mycologia **15**: 104. 1923).

Corynoides S. F. Gray, Nat. Arrang. Brit. Pl. **1**: 654. 1821. — Etymology: *κορύνη*, club; *εἶδος*, like. Gender: f. — Type species (selected): *Clavaria cornea* Batsch (Dacrymycetaceae) = *Calocera cornea* (Batsch per Fr.) Fr. — Scope. Introduced with four species which form a very heterogeneous group. They are, in this order, "*Clavaria cornea*, Sowerby Fungi, 40; Persoon Syn. 596," *Corynoides fabarum* S. F. Gray ("*Clavaria fabae*, Sowerby Fungi, 404"), "*Clavaria farinosa*, Dickson Crypt. 2, 25; Sowerby Fungi, 308," and "*Clavaria byssoides*, Sowerby Fungi, 335." Thus, all species are (according to Gray's specific descriptions) more or less branched and non-terrestrial, two apparently important characters—not mentioned in the generic description. The latter runs: "Thallus cartilaginous or gelatinous, compressed; sporidia scattered over the whole surface of the thallus." — Typification. The generic name and the first species, *Clavaria cornea* Batsch, plainly show that there is some connection with the group of *Clavaria* L. that was called '*Corynoideae*' by Nees (Syst. Pilze, Ueberbl. 43. 1817). This latter taxon was conceived for the unbranched clavarias, and Nees's first species, *Cl. cornea*, evidently occupied that position because it was taken to be a transitional form between the branched and the simple clavarias. That species should be rejected as the type of Nees's infrageneric name, which is the reason why the latter is not listed here as basinym.[14] Gray maintained *Clavaria* L. for the unbranched species, took up *Ramaria* Holmskj. for a considerable part of the branched ones, and established, for *Cl. cornea* and the three other species already mentioned, a new genus for which he adapted Nees's epithet Corynoideae in the form of Corynoides (no author's citation): we are confronted here with the 'application' of a devalidated name of which the type species is excluded. — Gray's first species, *Clavaria cornea*, was considered the type by Ainsworth & Bisby (Dict. Fungi 73. 1943; 2d Ed., 79. 1945).[15] They were followed by Donk (*in* Bull. bot. Gdns Buitenzorg III **18**: 115. 1949). — Doty (*in* Lloydia **11**: 129. 1948), at a later date, proposed Gray's second species, *Corynoides fabarum*,[16] of unknown identity: "Choosing the latter species as the lectotype disposes of *Corynoides* Gray, as it will have to be considered a nomen dubium or perhaps at most a synonym of *Pistillaria*." Rogers (*in* Farlowia **3**: 434. 1949) seconded Doty's view, but was not quite sure whether the earlier typification could be summarily pushed aside; afterwards he seems to have had fewer scruples about this (Rogers *in* Farlowia **4**: 16. 1950). I want to protest emphatically against following this course for what appear to be cogent reasons. (i) *Clavaria cornea* agrees decidedly better with the original generic description than *Corynoides fabarum* and is, therefore, supported by the present regulations for fixing types. The only species of which Gray mentioned the consistency at all was *Cl. cornea*, which was given the English name of "Horny corynoide" and said to be "glutinous." (The word 'compressed' does not reappear in any of the specific descriptions!) (ii) *Clavaria cornea* was Nees's first species and the only somewhat divided species of the '*Corynoideae*': moreover, it was called "Hornartiger Stengelschwamm." A close study of Nees's and Gray's works has convinced me that the inclusion of *Cl. cornea* in Gray's genus conditioned the publication of the generic name *Corynoides*. (iii) *Clavaria cornea* was the earliest selected species and the substitution of *Corynoides fabarum* should be unconditionally rejected as long as the choice of the latter species is not supportable by some valid reason. (iv) If one would make *Corynoides* a nomen dubium by selecting *Corynoides fabarum*, one would create a potential source of debate and unforeseen consequences. — Remark. The proposal to conserve *Calocera* against *Corynoides*, which Donk (*l.c.*; Prop. Conserv. Calocera vs Corynoides 3 pp. Mimeographed; *in* Taxon **3**: 75. 1954) thought preferable to the lame, unsupportable one of an incorrect typification, has been withdrawn as superfluous (see under *Calocera*). The Secretary of the Special Committee for Fungi (*in* Taxon **2**: 29. 1953; *in* Mycologia **45**: 313. 1953) suppressed the proposal because he preferred *Corynoides fabarum* as type species.

Craterocolla Bref., Unters. Gesamtgeb. Mykol. **7**: 98. 1888. — Etymology: *κρατής*, bowl; *κόλλα*, glue. Gender: f. — Type species

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[14] *Clavaria* trib. *Corynoideae* "Nees" of Fries, Syst. mycol. **1**: 477. 1821, became the receptacle of the undivided species with the exclusion of the species of *Calocera*.

[15] "*Corynoides* S. F. Gray is based on *Calocera cornea* Fr."

[16] Listed by W. B. Cooke (Gen. Homobas. 26. 1953) as *C. "abarum."*

(only original species): *Tremella cerasi* Schum. sensu Tul. (Tremellaceae). — TYPONYMS: *Ditangium* P. Karst. (1870; nomen anamorphosis) and *Poroidea* Gött. ex Wint. (1884; nomen anamorphosis); and compare *Ombrophila* "Quél."

Cristella Pat.—See "Thelephoraceae."

Cystobasidium (Lagerh.) Neuhoff *in* Bot. Arch. **8**: 272. 1924. — ETYMOLOGY: κύστις, bladder; basidium. Gender: n. — TYPE SPECIES (only original species of basinym): *Jola lasiobolii* Lagerh. (Auriculariaceae). — BASINYM: *Jola* subgen. *Cystobasidium* Lagerh. *in* Bih. svenska VetensAkad. Handl. **24** III (4): 15. 1898.—One species. — SCOPE. The genus as published by Neuhoff was identical with the subgenus. — REMARK. The generic name is ascribed to "Gäumann, Verg. Morph. Pilze 414. 1926" by Martin [*in* Stud. nat. Hist. Univ. Iowa **19** (3): 95. 1952].

[*Dacrymicella.*—See *Dacrymycella.*]

Dacrymices.—See *Dacrymyces.*

[*Dacrymycella* Bizzoz.—See Deuteromycetes.]

Dacrymyces C. Nees *per* Fr., Syst. mycol. **1**: lv. 1821; **2** (1): 228. 1822. — ETYMOLOGY: according to Fries (*l.c.*, 1822) from δάκρυ, tear, and μύκης, fungus; sometimes another word for tear is given, δάκρυον. Gender: m. — TYPE SPECIES (only original species definitely included): *Dacrymyces stillatus* C. Nees.— Nees von Esenbeck cited "*Tremella lacrymalis* und *abietina* Pers. S.F. 628. 19 und 627. 16" as synonyms, but the identity of the species he had before him must be solved rather from his description and illustration (Syst. Pilze 89 *pl. 7 f. 90.* 1816). It is Neuhoff's opinion [*in* Ark. Bot. **28A** (1): 38, 44. 1936] that "schon die Beschreibung und der deutsche Name, Geflossener Tranenpilz, mehr noch die Abbildung Taf. VII, f. 90, bekunden unzweifelhaft, dass auch mit [der Bezeichnung *D. stillatus*] nur *D. deliquescens* [Bull.] (und zwar im wesentlichen die konidientragende Form) gemeint ist." In view of the present Code, *Dacrymyces deliquescens* (Bull. per Mérat) Duby, then, would not be the correct name for Nees's fungus: this would be, rather, *D. stillatus* C. Nees per Fr. if one agrees with Neuhoff except for the conclusion that "im wesentlichen die konidientragende Form gemeint ist," an opinion that might turn *Dacrymyces* rather into a nomen anamorphosis of restricted legitimacy applicable to the imperfect stage only. I would say that Nees had primarily the basidial stage in his mind (and perhaps did not at all include the conidial stage), as follows from his drawings of details and his description: "... im Alter gelappt, durchscheinend, gelb bis ins Pommeranzgelbe ..." This would have been 'tending to remain hemispherical, rather opaque, reddish orange' if the conidial stage had been described (cf. Buller, Res. Fungi **2**: 171-179 *fs.* 59, *60.* 1922). The figure of the fruit-bodies now shows the latter as orange, but this may be due to discoloration. — DEVALIDATED NAME: *Dacryomyces* C. Nees, Syst. Pilze 89. 1816 & Ueberbl. 24. 1817.— Although the generic description suggests at least several original species ("auf erstorbenen Stämmen, Reisern und Stengeln") only one was treated, *Dacryomyces stillatus.* However, elsewhere in the book Nees (*op. cit.* p. 155) remarked, under *Tremella*: "Zu *Dacryomyces* gehören übrigens von den zu *Tremella* gezählten Arten, so weit bis jetzt meine Untersuchungen reichen, folgende: *Tremella abietina, Peziza, lacrimalis* [!], *Urticae, violacea, fragiformis* Pers." Yet, they were not quite definitely transferred to *Dacryomyces,* except *T. abietina* and *T. lacrymalis* which were included as synonyms under *D. stillatus.* — VALID PUBLICATION & SCOPE. In 1821 Fries accepted the genus but merely listed it ("*Dacrymyces.* Nees"), without adding a description.[17] Yet, this use constitutes the valid re-publication of the generic name, a valid reference to the obligate description being present as an implicit one in the form of the author's citation (cf. Stockholm Code, Art. 48 and its last Example). This conclusion implies that the scope of the genus in 1821 is that of Nees's and that the type species is Nees's *Dacryomyces stillatus* (original sense). In 1822 Fries included seven species, one of which is *Dacrymyces stillatus* C. Nees per Fr. as a very inclusive species. — REMARK. In 1822 Fries explicitly indicated "*Tremella deliquescens* Bull." as the type species; he listed that name as a synonym of *Dacrymyces stillatus.* This designation is not an 'original' one, the generic name being already validly re-published by Fries in the starting-point book the year before, in such a manner that

[17] Agardh (Aphor. bot. 82. 1821) acted similarly: he listed the genus as "*Dacrymyces,* N." (name only) at the end of the year.

Nees's original *Dacryomyces stillatus* must be accepted as the type. This point is emphasized here. — VARIANT SPELLINGS: *Dacryomyces* C. Nees, *l.c.*—This is the original spelling still in use besides Fries's modification, who preferred the name without an 'o.' — "*Dacrymices*"; Brongn. *in* Dict. class. Hist. nat. **3**: 462. 1823.—Evidently an unintentional error. — "*Lacryomyces*"; Neuhoff *in* Pilz- u. Kräuterfr. **5**: 65. 1921.—An error, corrected on page 97.

Dacryomitra Tul. *in* Ann. Sci. nat. (Bot.) V **15**: 217. 1872. — ETYMOLOGY: *Dacryo-* (*myces*) and *Mitr(ul)a*. Gender: f. — TYPE SPECIES (only original species): *Dacryomitra pusilla* Tul. (Dacrymycetaceae). — VALID PUBLICATION. Descriptio generico-specifica.

Dacryomyces.—See *Dacrymyces*.

Dacryonaema Nannf. *in* Svensk bot. Tidskr. **41**: 336. 1947. — ETYMOLOGY: Dacry- (mycetaceae); the genus (*Sphaero*)*naema*. Gender: n. — TYPE SPECIES (by original designation and only original species): *Sphaeronaema rufum* Fr. per Fr. (Dacrymycetaceae). — PROTONYM: *Dacryonaema rufum* (Fr. per Fr.) Nannf. ined. *in* Lund. & Nannf., Fung. exsic. suec. Fasc. 29-30: 23 no. 1437. 1947.—As far as the generic name is concerned, a nomen nudum.

Dacryopinax G. W. Mart. *in* Lloydia **11**: 116. 1948. — ETYMOLOGY: *δάκρυ*, tear; *πίναξ*, dish, platter. Gender: m. — TYPE SPECIES (by original designation): *Guepinia elegans* Berk. & C. (Dacrymycetaceae). — SCOPE. Introduced with three species.

Dacryopsella Höhn.—See "Clavariaceae."

Dacryopsis Mass. *in* J. Mycol. **6**: 180. 1891 (description reproduced *in* Grevillea **20**: 23. 1891). — ETYMOLOGY: *δάκρυ*, tear; *ὄψις*, appearance. Gender: f. — TYPE SPECIES (selected): *Coryne gyrocephala* Berk. & C. apud Berk. (Dacrymycetaceae).—Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 31-32. 1944] considered one of the other original species, *Ditiola nuda* Berk. & Br., synonymous with *Coryne gyrocephala*. — SCOPE. Introduced with four species, and one mentioned as allied but not definitely included. First species, *Coryne gyrocephala*. — TYPIFICATION. The first species was suggested as type by Clements & Shear (Gen. Fungi 342. 1931).

Dactifera.—See *Ductifera*.

[*Delortia* Pat. & Gaill. *in* Bull. Soc. mycol. France **5**: 43. 1888. — Type species (only original species): *Delortia palmicola* Pat. & Gaill. — The genus was assigned by its authors to the Heterobasidiae. However, later on Patouillard (Essai taxon. Hym. 33. 1900) stated that it belonged to the imperfect fungi (Deuteromycetes), as already suspected by A. Möller (*in* Bot. Unters. Tropen **8**: 35. 1895), and that it was related to *Everhartia* Sacc. & Ell. Linder (*in* Ann. Missouri bot. Gdn **16**: 338. 1929) placed the genus among the helicosporous imperfect fungi following *Everhartia*.

Dicellomyces L. Olive.—See Exobasidiaceae.

Difiola.—See *Ditiola*.

Ditangium P. Karst.—See Deuteromycetes. As will be explained in a subsequent part of the present series this name unfortunately has to be regarded as permanently associated with an imperfect stage, the correct name for the perfect stage being *Craterocolla* Bref., q.v.

Ditiola Fr., Syst. mycol. **2** (1): 169. 1822. — ETYMOLOGY: *δίς*, twice; *ἴουλος*, down. Gender: f. — TYPE SPECIES (selected): *Ditiola radicata* (A. & S.) per Fr. (Dacrymycetaceae). SCOPE. Introduced with four species, the first of which is *D. radicata*. — TYPIFICATION. *Ditiola radicata* can be safely taken as type species. It was accepted as such by Brongniart (*in* Dict. Sci. nat. **33**: 572. 1824): "Ce genre ... a pour type le *Peziza turbo*, Pers., ou *Helotium radicatum*, Alb. et Schw." It was also suggested by Clements & Shear (Gen. Fungi 342. 1931) and accepted by Kobayasi (*in* Sci. Rep. Tokyo Bunrika Daigaku B **4**: 108. 1939) and later authors. The generic description is evidently mainly based on that species; the three other ones agree less well with it. — REMARKS. Fries stated that he made use of an already existing name of "J. Brown"; *Ditiola* P. Browne ("Agaricaceae") is a name given to a fungus having no relation at all with this genus. — Saccardo (Syll. Fung. **8**: 606. 1889) and other authors mention in synonymy a genus "*Ditiola* Schulz. Beitr. 1860, p. 322, nec Fr." There is no such homonymous genus; S. Schulzer von Müggenburg [*in* Verh. zool.-bot. Ges. Wien **10** (Abhand.): 321-323. 1860], following a general discussion of the genus, merely attributed to Fries's genus a species now excluded from it. — VARIANT SPELLING: "*Difiola*"; P. Karst.,

Krit. Öfvers. Finl. Basidsv. Tillägg 3: 36. 1898 (= *in* Bidr. Känn. Finl. Nat. Folk **62**: 100. 1903).—An error of printing.

[*Dixidium* R. Poisson *in* Ann. Paras. humaine & comp. **10**: 439. 1932. — Type species (only original species): *Dixidium dixae* R. Poisson, a fungus found on the rectal epithelium of larvae of *Dixa sp.* The author did not definitely assign it a place in classification, but he compared certain parts of it with the 'promycelium' of Uredinales or the basidium of *Auricularia*. The fungus is apparently not a basidiomycete, although it has been listed as one.]

Ductifera Lloyd, Mycol. Writ. **5**: 711. 1917. — Etymology: ductus, duct; fero, I bear. Gender: f. — Type species (only original species): *Ductifera milleii* Lloyd (Tremellaceae).—I have been able to study the type in Lloyd's herbarium; gloeocystidia are conspicuous and copious and the basidia numerous, conspicuous, and definitely tremellaceous! Recently Wells (*in* Lloydia **20**: 58. 1957) combined *Tremella pululahuana* Pat. and *Exidiopsis alba* Lloyd into a single species under the name *Gloeotromera pululahuana* (Pat.) Ervin and listed *Ductifera milleii* as a synonym of this emended conception. In any case *Ductifera* is an earlier name for *Gloeotromera* Ervin, q.v. For the combination *Ductifera pululahuana* (Pat.) Donk, see page 164. — Variant spelling: "*Dactifera*"; Trotter *in* Sacc., Syll. Fung. **23**: 581. 1925. — Typonym. *Gloeotromera* Ervin is based on *Exidiopsis alba.*

Echyna.—See *Ecchyna.*

E c c h y n a Fr. 1825.—See under *Ecchyna* Fr. ex Boud.

Ecchyna Fr. (1849) *ex* Boud. *in* Bull. Soc. mycol. France **1**: 111 footnote. 1885. — Etymology: *εκχύννω,* I pour out. Gender: f. — Type species (only original species): an unnamed fungus described by Fries.—For its description, see below. The fungus is now silently identified with *Onygena faginea* Fr. per Fr. (Auriculariaceae). It can hardly be taken as an abnormal plant in the sense of the Code.

Protonym, valid publication, & scope. The following historical outline duplicates in many respects those by Shear & Dodge (*in* J. agr. Res. **30**: 413-414. 1925) and Weese (*in* Ber. dtsch. bot. Ges. **37**: 517-518. 1919). Fries published the name *Ecchyna* in 1819 [Nov. Fl. suec., Part[ic]. V. Cont. 80], giving the name only and adding "l.c." It has not yet been determined to which work Fries referred. The next mention of the name by Fries (Syst. Orb. Veg. 151. 1825) is in an observation under the description of the genus *Onygena* Pers., in which he says he collected a notable fungus with horn-like branches but without heads, which he called *Ecchyna,* but it may be a monstrous cellar-form of *Onygena faginea.* Meanwhile it deserves careful investigation.[18]

The name reappears in 1849 (Fries, Summ. Veg. Scand. **2**: 446) in a footnote in Latin under *Onygena faginea*: "There exists intermediate between this [*O. faginea*] and the next [*Lasioderma* Mont.] a fungus provisionally named *Ecchyna*" (translated). A brief characterisation follows.[19]

His next use of the name is in 1851 (Fries *in* Acta Soc. Sci. upsal. III **1**: 135 = Nov. Symb. 119), when he says in Latin in an observation on *Cnygena equina*: "I have proposed *Ecchyna* for *Onygena faginea* only as a subgenus of *Onygena.*[20] It is very different from *Pilacre* to which my friend Berkeley refers it. It might be justifiable to propose *Onygena faginea* as an entirely distinct genus, but however others may feel it is impossible for me trusting to the harmony of nature to attribute great weight to microscopical characters which are easily interpreted by morphological and physiological laws." Fries's next mention is in 1857 (*in* Öfvers. Vetensk-Akad. Förh., Stockh. **14**: 151 [21]) where he simply gives the name in a list of the species as "l'*Ecchyna faginea* (*Onygena* du S.M.)" (French version).

(*to be continued*)

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[18] "Legimus ex hac regione fungum admodum memorabilem ramoso-cornutum (*Ecchyna* dictum) absque capitulo discreto; sed verior, ne sit *O. fagineae* monstrositas in cryptis. Interia ulteriore indagatione dignus."

[19] "... peridio difformi, strigoso-hirto, sporis laxis, nec cellula matricali s. asco receptis, qui a priori quoad fructificationem recedit ...."

[20] "Hinc *Ecchynam* s. *Onygenam fagineum* (Cfr. S. Veg. Scand.!) tantum ut subgenus *Onygenae* proposui ...."

[21] Of this paper a French version appeared [*in* Ann. Sci. nat. (Bot.) IV **12**. 1859, see p. 313] and a German one (*in* Flora **42**. 1859, p. 541).

NEWS AND NOTES

ORTOGRAFIA DEL EPITETO ESPECIFICO *CARTHAGENENSIS* RELATIVO A CARTAGENA (COLOMBIA)

Algunas especies descubiertas por Nicolas J. JACQUIN en las cercanías de Cartagena (Colombia) y descritas por él en las obras que publicó [1] referentes a su exploración botánica de las Antillas y la Costa Caribe del continente sudamericano (principalmente Colombia) en el siglo XVIII, llevan epíteto relativo a la ciudad mencionada, que el insigne botánico visitó en 1759, y se citan muy frecuentemente en la literatura botánica — aún la más reciente — con la grafía "carthag*i*nensis" (o "carthag*i*nense" según el género gramatical) sin tener en cuenta la grafía original adoptada por JACQUIN, que es carthag*e*nensis y carthag*e*nense [2]. El actual Código Internacional de Nomenclatura Botánica (Paris, 1954) prescribe en su artículo 73 que la grafía original de un nombre o epíteto debe conservarse excepto cuando se trate de error ortográfico o tipográfico que puede ser enmendado. En el asunto que me ocupa no se trata de error de esta índole sino que es obvio que JACQUIN formó deliberadamente el epíteto carthag*e*nensis derivándolo del nombre *Carthagena,* como solía escribirse antiguamente; es decir, NO empleó la declinación clásica de *Carthago, Carthaginis,* que dice relación a la antigua Cartago. No lo hizo, precisamente para afirmar la distinción toponímica entre la ciudad americana y la africana.

También al indicar la localidad al final de sus descripciones JACQUIN usó derivados de *Carthagena;* por ejemplo: "Crescit Carthagenae", o "in territorio Carthagenensi", o "prope Carthagenam", o "in sylvis Carthagenensibus". Su intención no puede ser más obvia.

Por lo tanto me parece ortográficamente incorrecto, además de irregular (en cuanto al Código) cambiar la grafía adoptada por JACQUIN. Si fuera admisible algún cambio en ella, preferible sería suprimir la *h* y escribir simplemente *cartagenensis* por lo que se refiere a la actual Cartagena colombiana; mas no lo es porque se opone a ello el referido artículo 73 del Código.

Mayo 16/58.

ARMANDO DUGAND
Barranquilla, Colombia.

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[1] La más importante de estas obras es la titulada "Selectarum Stirpium Americanarum Historia", Viena (1763).

[2] *Acalypha carthagenensis, Diphysa carthagenensis, Elaterium carthagenense, Epidendrum carthagenense, Erythroxylum carthagenense, Eugenia carthagenensis, Helicteres carthagenensis, Jatropha carthagenensis, Justicia carthagenensis, Lythrum carthagenense, Piscidia carthagenensis, Psoralea carthagenensis, Psychotria carthagenensis.*

THE YEARBOOK OF INTERNATIONAL ORGANIZATIONS

This Yearbook is published by the Union of International Associations, Brussels, with the official collaboration of the Secretariat of the United Nations. It describes in detail, in a standardized presentation, all intergovernmental and non governmental international organizations now in activity, that is to say approximately 1,200 bodies.

The subject matter is divided into six main sections: the United Nations and the Specialized Agencies — European Communities — Other Inter-Governmental Organizations (more than 100) — International Non-Governmental Organizations (classified in 19 chapters) — Institutes of International Affairs — and a section comprising French and English subject index, list of initials and a geographical index. The entries, which average about one page in length, are in English, but the organizations' names are given in English, French, Spanish and German.

The entry for each organization gives its name, addresses, regional secretariats, representatives at the United Nations in New York and Geneva, history, aims, members, structure, staff, working languages, name and nationality of officers, budget, consultative or organic relations with other international organizations, activities (including congresses, past and future) and publications.

Yearbook of International Organizations, 7th edition 1958-59, published by the Union of International Associations, Palais d'Egmont, Brussels I, Belgium.

Price: U.S. $ 14.— (Sh. 78/—; B.frs. 580.—).

Dr. H. ST. JOHN

Dr. Harold St. John, after serving for nine years as professor of botany at the State College of Washington, and then for thirty years at the University of Hawaii, will retire in August 1958 as professor emeritus. For the year 1958-59 he has been appointed Whitney visiting professor at Chatham College, Pittsburgh, Pa., U.S.A.

CALL FOR NOMINATIONS

Officers and Council Members of I.A.P.T. serve in the periods between International Congresses. In order to present a slate of candidates to the membership in time to be voted upon before the next Congress, it is necessary to have the nominations by the members in the hands of the Secretary by November 1, 1958.

The President, the Vice-President and the Administrator of Finances may not be renominated to the offices they now hold. On the other hand, the Secretary, the Treasurer and the other Council Members may be renominated. However, there may not be more than three Council Members from any one country.

The present Officers and Council Members are as follows: R. C. Rollins, President; W. Robyns, Vice-President; J. Lanjouw, Secretary; J. Rousseau, Administrator of Finances; F. A. Stafleu, Treasurer; Ch. Baehni, A. L. Cabrera, C. M. Eardley, F. R. Fosberg, R. E. Fries, H. Humbert, H. Melchior, J. A. Nannfeldt, C. G. G. J. Van Steenis and W. B. Turrill, Councilors.

The nominations are to be sent to the secretary on a special form that should now be in the hands of all members. Those who have failed to receive such a form should communicate with the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht, Netherlands.

DEUTSCHE KASSENSTELLE

Das Postscheckkonto des offiziellen Kassenwartes der Gesellschaft für alle deutschen Mitglieder, Dr. W. Domke ist: *Hamburg 133287.*

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LATER STARTING POINTS IN ALGAE

Paul C. Silva (Urbana, Illinois)*

In the International Code of Botanical Nomenclature the most significant exception to the principles of priority of publication and of the type method is the provision for later starting points for certain groups specified in Article 13. Unlike conservation (Article 14), which legalizes exceptions in individually proposed, argued, considered, and approved cases on and above the generic level, later starting points violate the principles of the Code at all taxonomic levels. Donk (Taxon 6: 245-256. 1957) has summarized the history and philosophy of later starting points. In the same account he gives massive evidence of almost overwhelming uncertainty and confusion resulting from differences in methods of typifying revalidated names of fungi. The purpose of the present note is to support an accompanying proposal that later starting points in the algae be eliminated.

(1) Later starting points violate two of the most basic principles of the Code, namely, priority of publication and the type method. This violation is supposedly justified by the consideration that for certain groups of algae a more stable nomenclature results from the use of a later starting point because of the uncertainty and difficulty inherent in attempts to determine the application of names published between 1753 and the later starting point. To quote, for example, Nordstedt (Bot. Not. 1906: 116. 1906) in his proposal for a later starting point for desmids: "From the preceding it will be seen, that during a long time a great uncertainty prevailed as to the definition of species, genera and families.... In my opinion it is best for the stability of nomenclature to start from Ralfs' British Desmidieae 1848 with no emendations or with as few as possible." Such a dubious advantage seems to me to be immeasurably outweighed by the disadvantages of uncertainty and confusion resulting from diversity of interpretation in typifying revalidated names, as discussed immediately below.

(2) Later starting points create nomenclatural confusion through divergent interpretations of their application. This point is capably elaborated by Donk. In brief, differences of opinion hinge on the consideration whether elements of a type should or should not include pre-starting point materials. Another way of looking at this question is to consider whether the intention of the provision for later starting points was to conserve the taxonomy and nomenclature or merely the nomenclature of a particular starting point author. For fungi, Donk concludes that conservation of nomenclature only was intended (that is, "only a suspension of the priority principle [illegible]

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*) I am grateful to Professor G. F. Papenfuss for critically reading this manuscript.

COMMONWEALTH MYCOLOGICAL INSTITUTE
15 SEP 1958

and accordingly he proposes that the Code be modified to specify that later starting points for fungi affect only the dates of publication of names, not the types of these names. In this manner, divergence of interpretation theoretically would be eliminated, or at least greatly reduced, among mycologists. From Nordstedt's proposal, however, it can be seen that the intention in establishing a later starting point for desmids was to conserve both the nomenclature and the taxonomy of Ralfs. In those instances in which Nordstedt doubted that Ralfs had in hand the species that he claimed to have, he excused Ralfs by blaming the uncertainty of identification on inadequacies of the original description and figures. The same defense was used in certain instances in which Ralfs did not adopt the earlier of two competing epithets. Nordstedt's intentions may best be summarized by quoting his proposal: "I propose the following rules for the nomenclature of the Desmidiaceae.

1. The nomenclature begins with The British Desmidieae by Ralfs 1848.

2. The authors of names, given earlier, but accepted by Ralfs in Brit. Desm., must always be quoted as such (e.g. — Ehrenb. sec. Ralfs in Brit. Desm.), except if the identification of the name in Ralfs' Brit. Desm. and in the works of the older authors be very doubtful.

3. Exceptions. [There followed two nomenclatural exceptions, that is, usages not adopted by Ralfs but favored by Nordstedt.]"

In my opinion, the extensive analysis, genus by genus and in part species by species, that Nordstedt deemed necessary to justify his proposal speaks strongly against the practicability of later starting points and strongly for the practicability of solving nomenclatural problems through recourse to the basic uncompromised principles of the Code. Contrary to Nordstedt's reasoning, his conclusion that many older names are of indeterminable application does not support the idea of later starting points, because even in the absence of a later starting point such a name, in accordance with the type method, would not be priorable against a later name unless it could be shown that the type was conspecific with the type of the later name.

(3) Later starting points create nomenclatural uncertainty in that the choice of starting points depends upon taxonomic opinion. Whether or not a generic name is validly published as of a particular date depends upon the lectotypification of the genus to which it applies in those instances in which the originally included species belong to groups with different starting points. For example, *Hydrococcus* Link (1833) was founded on two species: *Ulva pruniformis* Linnaeus, referable to *Nostoc* [Vaucher] Bornet et Flahault (1888); and *U. pisiformis* Hudson, the identity of which is unknown. Lectotypification of this genus with *Ulva pruniformis* would devalidate it, inasmuch as valid nomenclature for the group of algae that includes *Nostoc* begins with the monograph by Bornet and Flahault (1886-1888). Similarly, whether or not a specific epithet is validly published as of a particular date depends upon the taxonomic placement of the type specimen in those instances in which there is a difference of opinion involving groups with different starting points. Relationships between nomenclature and taxonomy are basic in the Code, but except for later starting points and conservation, differences in taxonomic opinion merely lead to differences in the selection of correct names for taxa under consideration. Later starting points (as well as conservation) more profoundly affect nomenclature by invalidating and illegitimatizing certain names and thus evoking repercussions in the realm of homonymy (see immediately below).

(4) Later starting points create nomenclatural problems by upsetting normal homonymic relationships. As an example of a simple case, *Lyngbya* C. Agardh (1824), devalidated by a later starting point, was revalidated by Gomont (1893), thus inverting its original homonymic relationship with *Lyngbya* Gaillon (1828),

an illegitimate substitute name for *Ectocarpus* Lyngbye (1819). *Lyngbya* C. Agardh ex Gomont stands in need of conservation, although the date of the devalidated publication (1824) would probably satisfy most phycologists, who accordingly would not understand the need for conservation. As an example of a complicated case, *Anabaena* Bory (1822, '*Anabaina*', orth. mut. Kuetzing, 1843), devalidated by a later starting point, was revalidated by Bornet et Flahault (1888), thus inverting its original homonymic relationship with *Anabaena* A. Jussieu (1824). But in this case the artificially earlier homonym is the correct name for a genus of Euphorbiaceae recognized by certain workers (e.g., Pax and Hoffmann in Engler, Pflanzenreich IV, 147 [9]—[11]: 27. 1919). Although two substitute names have been proposed for *Anabaena* A. Jussieu in consideration of *Anabaena* Bory, namely, *Romanoa* Trevisan (1848) and *Anabaenella* Pax et Hoffmann (1919), devalidation of the original publication of *Anabaena* Bory by Article 13 causes *Anabaena* A. Jussieu to become the correct name for its genus and requires *Anabaena* Bory ex Bornet et Flahault to receive a different name. Elimination of later starting points would obviate the necessity of changing the name of this well known genus of blue-green algae, although conservation would be necessary to retain legally the spelling *Anabaena*.

(5) Later starting points have seldom been used by specialists of the groups concerned, let alone by general taxonomists of algae. Two explanations particularly are suggested: the specialist may not have made consistently serious attempts to work out a firmly based nomenclature to express his taxonomic opinions; or he may have made such attempts and either ignored or found unworkable the provision for later starting points. In either instance the obvious inference is that the use of later starting points has not seemed essential to the specialist.

(6) Later starting points imply that the Code cannot otherwise competently govern the formulation of a stable nomenclature in certain specified groups. Inasmuch as little if any justification can be given the consideration that the taxonomy of desmids, Oedogoniales, and Oscillatoriales prior to their respective later starting points is essentially in any different state than that of most groups of algae for which 1753 is the starting point, one is led to infer that the Code is in large part a failure insofar as algae are concerned. In my opinion, this is unwarranted pessimism. If the type method is faithfully followed so that all names are either typified or, if not capable of typification, shelved as *nomina inquirendae*, the Code is seen to be successful in providing a basis for a stable nomenclature for all groups using 1753 as the starting point.* Disenchantment with the Code usually follows the discovery that taxonomic fluidity, a cherished prerogative, must be accommodated by nomenclatural flexibility, at which point those who are not prepared to adjust would gladly substitute rigidity (fixity) for stability, thereby denying the Code its *raison d'être*.

Among mycologists one often hears expressed the wish that they were not plagued by later starting points, but the consensus is that it is too late to do anything except to learn to live with them. Among phycologists the question might be raised whether it is too late, even if desirable, to eliminate this provision. Granted that some nomenclatural changes would result which might conceivably inconvenience those workers who have faithfully abided by later starting points, the number of such workers is exceedingly small. Restoration of normal homonymic relationships would necessitate consideration of a few changes in the lists of conserved generic

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*) St. John's proposal to delete Article 65 (Taxon 6: 198. 1957) is in keeping with this reasoning and deserves the serious consideration of the Montreal Congress.

names, but a larger number of changes yet to be made under current provisions would be obviated by the elimination of later starting points. Believing that benefits to be derived from eliminating later starting points in the algae far outweigh possible harmful results, I should like to propose that the exceptions to Article 13 *g* be deleted.[1])

REPORT OF THE COMMITTEE FOR SPERMATOPHYTA

CONSERVATION OF GENERIC NAMES I

H. W. Rickett, Secretary (New York)

This report contains the recommendations of the Committee for Spermatophyta on proposals for conservation of generic names. These proposals fall into several categories. (1) Certain names were studied and reported by the Stockholm Committee (appointed at the Seventh International Botanical Congress at Stockholm, 1950), but were not submitted to a vote. The reports on these proposals were distributed to the present committee — the Paris Committee (appointed at Paris in 1954), further opinions were submitted by members of the committee, and a vote was taken. (2) Certain other names were voted on by the Stockholm Committee but with several abstentions and indecisive results. These were referred to the Paris Committee, and assigned to members of the committee for study and reports, the reports were distributed, further opinions and comments were obtained from the committee, and new votes were taken. (3) Names proposed for conservation (or for deconservation — see below) since the eighth Congress (1954) were assigned to members of the committee for study and reports, the reports were distributed to all members and additional opinions obtained, and a vote was taken.

The names referred to the committee are listed below, in the above categories, with the recommendations of the committee as determined by the voting. The votes are shown by the figures separated by a dash that follow the name or names concerned. By rules of procedure adopted by the committee, an affirmative vote of 70 per cent (6-2) of the active members was required to recommend conservation (or other action). Abstentions from voting were to be counted as negative votes unless the members in question were incapacitated. There were, however, no abstentions. It is a source of satisfaction that most of the recommendations listed below were voted unanimously.

A very brief digest of the considerations before the committee is added to each proposal.

(1) *Names studied and reported by the Stockholm Committee but not voted on.*

204. Baldingera Gaertn., Mey. et Scherb. (1799) vs. *Typhoides* Moench (1794) (0-8) (Syn. Prop. Stockholm 231.)

The arguments advanced for conservation were either purely taxonomic considerations or not in accord with the Code (such as the inappropriateness of the proposed nomen rejiciendum). The single species involved is usually placed under *Phalaris*. *Typhoides* has been used in recent floras.

209. Lasiagrostis Link (1827) vs. *Achnatherum* Beauv. (1812) (0-8) (Syn. Prop. Stockholm 231. Repert. Sp. Nov. 52: 150. 1943.)

Lasiagrostis has been in general use but *Achnatherum* has been taken up in recent works. Not all combinations have been made under the latter name, but the genus is small, unimportant, and often merged with *Stipa* or *Calamagrostis*.

788. Ambrosinia L. (1764) vs. *Ambrosina* Bassi (1763) (0-8) (Syn. Prop. Stockholm 231. Repert. Sp. Nov. 52: 144-161. 1943. 53: 174-178. 1944.)

Although Bassi's paper appeared in Bonon. Inst. Acad. Comm. in 1767, it had also

**) Proposal no. 58 submitted to the International Botanical Congress, Montreal 1959.

been issued as a separate in 1763, and *Ambrosina* has priority over Linnaeus' version of the same name, published in Gen. Pl. in 1764. Moreover it has been shown that Bassi deliberately used the spelling *Ambrosina* (the spelling *Ambrosia* which appears in Ind. Kew., in Dalla Torre & Harms' Gen. Siphonog., and in the Pflanzenreich is an error). The genus is monotypic and of no importance, and no confusion can result from maintaining the original spelling in accordance with the Code.

951. **Chionographis** Maxim. (1867) vs. *Siraitos* Raf. (1836) (6-2) (Syn. Prop. Stockholm 90.)

Though the genus is small, the name *Chionographis* has been always used and no specific combinations have been made under *Siraitos.*

952. **Heloniopsis** A. Gray (1859) vs. *Hexonix* Raf. (1836), *Kozola* Raf. (1836), and *Sugerokia* Miq. (1868). (6-2) (Syn. Prop. Stockholm 233.)

No combinations were found with Rafinesque's names. Since the latter were published simultaneously and were based on the same type, they are of doubtful validity. Without conservation it would be difficult to know what generic name to use. *Sugerokia,* being later, does not come into question.

1028. **Apicra** Haw. (1819) vs. *Apicra* Willd. (1811) (0-8) (Syn. Prop. Stockholm 227. Kew Bull. 1939: 329, 330.)

Apicra Willd. is illegitimate since it was when published synonymous with *Haworthia* Duval. *Apicra* Haw. was attributed by Haworth to Willdenow, rather than being intended for a new genus. Because of the difficulty of typifying Willdenow's genus in such a way as to permit Haworth's later usage, and the inadvisability of conserving the later usage against the earlier, *Apicra* Haw. was renamed *Astroloba* by Uitewaal in 1947; this name has been adopted in several works on succulents. In view of these facts, the proposal to conserve *Apicra* Haw. was withdrawn by its proposer.

1166. **Hessea** Herbert (1837) vs. *Hessea* Berg. (1826) (6-2) (Syn. Prop. Stockholm 228.)

When *Carpolyza* Salisb. is divided, one of the segregates must retain this name; the other has no valid name unless the proposed conservation is effected. *Hessea* Berg., typified by *Haemanthus spiralis* Thunb., was nomenclaturally superfluous when published, since *Carpolyza* Salisb. (1806) had the same type. *Hessea* Herb., based on *Amaryllis stellaris* Jacq. (1797), is a later homonym. The name *Hessea* has been used for the combined genus, though *Carpolyza* is the correct name; conservation of *Hessea* for the segregate genus based on *Amaryllis stellaris* has no effect on the status of *Carpolyza,* since the latter was not listed in the proposal as a nomen rejiciendum.

1208. **Hippeastrum** Herbert (1821) vs. *Leopoldia* Herbert (1821) (8-0) (Syn. Prop. Stockholm 227; Kew Bull. 1939: 328, 329.)

The name *Hippeastrum* has become generally used (in standard horticultural works) for plants commonly called in English "amaryllis," a South American genus. Unfortunately this usage has been complicated by difficulty in typifying the Linnaean generic name *Amaryllis,* which some apply to the South African Cape belladonna, while others maintain that it belongs properly to *Hippeastrum.* This, however, has no direct bearing on the current proposal, since *Amaryllis* is not proposed for rejection. The problem of the committee was simply to decide between the well-known *Hippeastrum* and the obscure *Leopoldia.* A further difficulty is the question of validity of publication of the latter name, on which contrary opinions have been advanced. Conservation of *Hippeastrum* will obviate further doubt on this point. The confused status of the name *Amaryllis* L. remains a problem for taxonomists. If it can be conclusively shown, on the basis of the authorities cited by Linnaeus in synonymy, that this name belongs to the American genus, then it will automatically have precedence over *Hippeastrum.* If a specimen of the Cape belladonna from Hortus Cliffortianus, preserved in the British Museum, is accepted as the type of *Amaryllis, Hippeastrum* remains as the undisputed name for the American genus.

1401. **Chamaeorchis** L. C. Rich. corr. Koch (1837) vs. *Chamorchis* L. C. Rich. (1818) (1-7) (Syn. Prop. Stockholm 232. Repert. Sp. Nov. 52: 144-161. 1943. 53: 174-178. 1944.)

The contracted spelling was deliberately adopted by Richard; it was so spelled by him in several places, in spite of his citation of "Camaeorchis" of Bauhin. Though the cor-

rected spelling has been widely used, no confusion can result from restoring the original spelling of this monotypic generic name.

1410p. Gennaria Parl. (1860) vs. *Digomphotis* Raf. (1836) (0-8) (Syn. Prop. Stockholm 232.)

Rafinesque's name was based on two species, *Satyrium diphyllum* Link and *Habenaria goodyeroides* D. Don. The former is the type of *Gennaria*, and if selected as type of *Digomphotis* would make it necessary to conserve *Gennaria* or abandon it. The problem is avoided by taking the *Habenaria* as type of *Digomphotis* (following Schlechter). It was by choosing this alternative (which, moreover, is in accordance with the provision in the Code for following a previous selection of a lectotype) that the committee voted against conservation, thus rendered unnecessary to preserve *Gennaria*.

1533. Bletilla Reichenb. f. (1851) vs. *Jimensia* (Raf.) (1838) (6-2) (Syn. Prop. Stockholm 223.)

Bletilla has recently been recognized as a distinct genus with some 6 species. Rafinesque's name has never been used. To adopt it would necessitate new combinations.

9052. Leyssera L. corr. DC. Prodr. 6: 278 (1838) vs. *Leysera* L. (1763) and *Asteropterus* Adans. (1763) (4-4) (Syn. Prop. Stockholm 231.)

Voting was postponed by the Stockholm Committee because of a question about the date of publication of *Leysera* L. (The genus was first named *Callisia* in 1760; a later homonym of *Callisia* Loefl. (1758). It was renamed *Leysera* in 1763.) The corrected spelling is certainly to be preferred. (Leysser's name appeared as "Leyser" in the first edition of his *Flora halensis;* it was corrected in the second edition.) The correction to *Leyssera* was first made by Lessing in 1832. Since the original spelling was clearly an error, conservation is not needed to maintain a corrected version; moreover the name is still Linnaeus' name and should be cited as *Leyssera* L. (1763) corr. Less. (1832) (as "Leysera").

(2) *Names voted on by the Stockholm Committee after insufficient opportunity for study and in the absence of reports; with indecisive results.*

11. Pherosphaera Hook. f. (1857) vs. *Pherosphaera* Archer (1850) (0-8) (Taxon 2: 141. 1953.)

Pherosphaera hookeriana Archer, a monotypic new genus, was conspecific with *Microcachrys tetragona* Hook. f. Hooker then revived the name *Pherosphaera hookeriana* and applied it to other material. This was correctly renamed *Microstrobos niphophilus* by Garden & Johnson in 1950. Even if *Pherosphaera* Hook. f. were conserved, the epithet *niphophilus* would have to be adopted, not *hookeriana*. The proposers apparently did not realize this; the proposal seems to have been essentially one to conserve a specific name.

18. Nothotaxus Florin (1948) vs. *Pseudotaxus* Cheng (1947) (0-8) (Taxon 2: 208. 1953.)

These names are nomenclatural synonyms, the decision to raise the single species to generic rank having been taken almost simultaneously by Florin and Cheng. It seems that Cheng, having learned of Florin's intent through correspondence, hastened to publish his own name. As Sprague has written, however, "a nomenclatural committee is not a court of etiquette." To use conservation to assure "fair play" or the "rights" of an author would be contrary to the objective nature of the rules.

32A. Sequoiadendron Buchh. (1939) vs. *Americus* (1854) (3-5) (Taxon 3: 14. 1954.)

Americus was published not in a scientific paper but in a popular account of the "big tree" of California. One member of the committee felt that the proposal was "facetious," since no one could take *Americus* seriously. Another member, however, felt *Americus* to be validly published but that conservation should not be invoked to dispose of it. It was also suggested that "at best it constitutes an illegitimate name-change, as implicitly admitted by the author, and there was no intention to segregate a new genus from *Sequoia*." Cf. also Taxon 4: 40-42 (1955). In this article it is pointed out that the anonymous publication in question was really a plagiarism of Lindley's paper on the same subject, the name *Americus* being substituted for *Wellingtonia*; and we are reminded of the dictum that "the only proper reasons for changing a name are either a more profound knowledge of the facts resulting from adequate taxonomic study . . ." It would seem to the present reporter that, for one reason or

another, *Americus* Anon. can indeed be disregarded as having no status in nomenclature, and that the vote of the committee reflects this conviction on the part of at least 5 members.

73. Elisma Buch. (1869) vs. *Luronium* Raf. (1840) (0-8) (Taxon 2: 208. 1953.)

Although *Elisma* was until recently in general use, *Luronium* has been adopted in several widely used recent floras. The genus being monotypic (and moreover not always maintained as distinct), it will not disturb nomenclature greatly to use the earlier name and displace the later synonym. The committee also noted *Nectalisma* Fourr. (1869), of doubtful validity.

87. Elodea Rich. (1803) vs. *Elodea* Juss. (1789) and *Elodea* Vent. (1799) (2-6) (Taxon 3: 15, 16. 1954.)

Jussieu wrote "Elodea" by error for *Elodes* Adans., and did not contemplate making it a new name. (Since *Elodea* and *Elodes* are given in the code as examples of *different names* they cannot be considered orthographic variants of the *same name*.) Such an erroneous name has presumably no status and cannot disqualify a name which it resembles because of the error. *Elodea* Vent. is the same as *Elodea* Juss. Moreover, neither author accepted the name as that of a genus. For two independent reasons, therefore, conservation of *Elodea* Rich. is unnecessary.

87. Helodea Rich. corr. Reichenb. (1841) (as "Elodea") vs. *Elodea* Rich. (1803) (0-8) (Taxon 2: 208. 1953.)

Etymologically the spelling as corrected by Reichenbach is preferable, and has been adopted by a number of writers in continental Europe. The original spelling, however, has been maintained by the majority of writers. We are cautioned in the code, moreover, against changes in spelling that involve an initial letter.

899. Murdannia Royle (1840) vs. *Dilasia* Raf. (1838) and *Streptylis* Raf. (1838) (8-0) (Taxon 3: 65. 1954.)

The vote confirms the less decisive action of the Stockholm Committee. No report was made, the original proposal being adequately documented and the argument seeming conclusive.

1024. Kniphofia Moench (1794) vs. *Kniphofia* Scop. (1777) (6-2) (Taxon 2: 140, 141. 1953.)

The general use of *Kniphofia* in Moench's sense makes conservation obviously desirable. The present vote confirms the action of the Stockholm Committee. Rejection of *Tritoma* Ker (1805), included in the proposal, is of course unnecessary.

1048. Gagea Salisb. (1806) vs. *Stellaris* Agosti (1770) (0-8) (Taxon 2: 209. 1953.)

This and three other generic names were said to be antedated by names in a very rare work by Agosti. We are indebted to Pichi-Sermolli for finding this volume and for discovering that the names therein were not validly published under our rules. The names were given to taxa "denoted by misplaced terms," a genus being divided into divisions and subdivisions, these into groups that correspond to our genera, and these into species. Conservation against these names is superfluous.

1189. Nothofagus Bl. (1850) vs. *Fagaster* Spach (1841), *Calucechinus* Hombr. & Jacq. (1844), and *Calusparassus* Hombr. & Jacq. (1844) (8-0) (Taxon 2: 177. 1953.)

The proposal was adequately documented, the argument sound, and the action of the present committee confirms that of the Stockholm Committee. We note that no type was named by the proposer, and conservation is recommended with the provision that this deficiency be remedied.

1402. Herminium R. Br. (1813) vs. *Monorchis* Agosti (1770) (0-8) (Taxon 2: 209. 1953.)

See under *Gagea*.

1964. Conocephalus Bl. (1825) vs. *Conocephalus* Dumort. (1822) and *Conocephalus* Neck. (1791) (0-8) (Taxon 3: 76, 127. 1954.)

The question is somewhat confused by doubt on the status of Necker's names (his "species naturales"); but in any case *Conocephalus* Bl. is a later homonym of *Conocephalus* Dumort., a liverwort. The existence of the congeneric *Poikilospermum* Miq., under which all necessary combinations have been made, renders conservation superfluous.

2691. Enneastemon Exell (1932) vs. *Clathrospermum* Planch (1862) (1-7) (Taxon 2: 178. 1953.)

The proposal was made because of "incorrect diagnosis on the basis of a single flower that no longer exists." A member of the committee writes that "*Clathrospermum* could not be identified from its description." However, it was urged that this is not a sufficient basis for discarding a generic name, nor is it within the competence of a nomenclatural committee to pronounce on the adequacy of a type specimen. The identity of *Clathrospermum* is certain. About 12 species are known, and about 9 new combinations will be needed if *Enneastemon* is not conserved (since it has been generally used in recent literature).

2896. Aethionema R. Br. (1812) vs. *Thlaspidium* Agosti (1770) (0-8) (Taxon 2: 210. 1953.)

See under *Gagea*.

3794. Cyclocarpa Afz. (1871) vs. *Cyclocarpa* Miq. (1855) (0-8) (Taxon 3: 25. 1954.)

This proposal was adequately documented, and the desirability of maintaining *Cyclocarpa* Afz. established. But apparently it is demonstrable that Miquel wrote "Cyclocarpa" by error for *Cyclocampe* Steud. There is therefore no name *Cyclocarpa* Miq., and conservation is unnecessary.

4273B. Chamaebuxus Spach (1839) vs. *Polygaloides* Agosti (1770) (0-8) (Taxon 2: 210. 1953.)

See under *Gagea*.

4398. Bernardia Muell.-Arg. (1866) vs. *Bivonia* Spreng. (1821) (0-8) (Taxon 2: 140. 1953.)

The proposer argues that *Bernardia* Browne (1765) was not validly published since he did not "follow binomial nomenclature." A *specific epithet* must indeed be rejected if it appears in a work in which the author did not consistently use the binomial system; but this does not affect names of genera. Browne's name was actually a later homonym of *Bernardia* Mill. (1754), not mentioned by the proposer, and is the same genus. Ascription of the name to a later author is wholly unnecessary.

6614. Hunteria Roxb. (1824) vs. *Apocyno-Nerium* L. (1747) (0-8) (Taxon 2: 111. 1953.)

The proposal was evidently made under some misapprehension. *Apocyno-Nerium* is "pre-Linnaean" and has no status in nomenclature. Conservation against it is superfluous.

6626. Kopsia Bl. (1823) vs. *Kopsia* Dumort. (1822) (8-0) (Taxon 2: 111. 1953.)

The action of the committee confirms that of the Stockholm Committee. The proposal is clear and the argument for conservation conclusive.

7350. Plectranthus l'Hér. (1784). A proposal for retypification.

P. punctatus was selected as type in Brittonia 6: 85 (1947). According to Philips, Killick, Bullock, and Dyer, the generic description was based "almost, if not entirely on *P. fruticosus*." Although the report to the committee expressed doubt on this, the committee voted (6-2) to retypify the genus, as proposed, by *P. fruticosus*.

7380. Dunalia H.B.K. (1818) vs. *Dunalia* Spreng. (1815), *Dunalia* R. Br. (1814), and *Dierbachia* Spreng. (1825) (8-0) (Taxon 3: 25. 1954.)

Dunalia R. Br. was a nomen nudum and therefore lacks any status in nomenclature. *Dunalia* Spreng. is already rejected as a synonym of *Lucya* (nom. cons.), but since it was validly published still renders *Dunalia* H.B.K. illegitimate unless conserved. If the last name is conserved, there is of course no need to reject *Dierbachia* Spreng.

7484. Chaenorrhinum Lange (1870) vs. "Chanarrhinum" [*Chaenarrhinum*] Reichenb. (1828) (5-3) (Taxon 2: 210. 1953.)

This is merely a question of orthography, in which the proposer himself made one error. De Candolle first spelled the name *choenorhinum* (attention is called to the frequent confusion by early printers of the digraphs *oe* and *ae*; de Candolle's spelling is probably to be treated as a typographic error and corrected as such); he gave it no definite rank. It was subsequently treated as a section of *Linaria*, and correctly spelled. There is some question whether the name, in its generic rank, can be rightly ascribed to Reichenbach (1828) or to Lange (1870). The vote of the committee reflects the suggestion that, in view of the several orthographies, conservation be used to place future usage beyond doubt; but sufficient votes were not obtained for this, and it remains the responsi-

bility of the individual botanist to correct Reichenbach's spelling if he considers it an orthographic error.

7727. Catalpa Scop. (1777) vs. *Cumbulu* Adans. (1763) (0-8) (Taxon 2: 111. 1953.)

It was shown that *Cumbulu* Adans. is not, in fact, a synonym of *Catalpa,* nor even in the same family. Conservation of the latter name is therefore unnecessary.

7887. Rechsteineria Regel (1848) vs. *Gesnera* Mart. (1829), *Gesneria* Sw. (1800), *Alagophyla* Raf. (1837), *Megapleilis* Raf. (1837), *Styrosinia* Raf. (1837), and *Tulisma* Raf. (1837) (6-2) (Taxon 3: 130-132. 1954.)

Several of these names are unavailable or for other reasons need not be rejected to maintain *Rechsteineria. Gesnera* Mart. is a later homonym of *Gesneria* L., being an orthographic variant of it. *Gesneria* Sw. was not proposed as a new genus. With the rejection of Rafinesque's names in favor of the name in use most members of the committee were in agreement, though it was suggested also that conservation should not be invoked to save horticultural names.

9304. Actinella Lewis (diatom) vs. *Actinella* Pers. (1807).

The Diatom Subcommittee of the Committee for Algae asked this committee to elucidate the status of *Actinella* Pers. and to state any known objection by phanerogamists to the conservation of *Actinella* Lewis over it.

Actinella Pers. is an illegitimate substitute for *Actinea* Juss. (1803). Furthermore, it seems that *Actinea heterophylla* may be a *Helenium;* in which case the remaining species that have been called *Actinella* are *Hymenoxys* Cass. There is therefore no obstacle to the use of *Actinella* for a diatom, at least so far as *Actinella* Pers. is concerned. The committee concurred in this view (8-0).

(3) *Names proposed for conservation or other action since the eighth congress (1954).*

424. Bambusa Schreb. (1789) vs. *Bambos* Retz. (1789) (7-1) (Taxon 6: 155. 1957.)

An earlier proposal (Taxon 5: 26-28. 1956) was concerned with typification. It sought to conserve *Bambusa* Schrad. (1810) with the type *B. vulgaris.* This is taxonomically the same as *B. arundinacea* Retz., but the latter name has been universally misapplied to another common bamboo. The proposal overlooked the fact that the earlier epithet would have to be reinstated and conservation of *Bambusa* Schrad. did not avoid the difficulty. The later proposal, which is the one accepted by the committee, is to conserve *Bambusa* Schreb., with type *B. arundinacea,* against *Bambos* Retz. (1789). Retzius' and Schreber's name were published in the same year, and it is uncertain which was earlier. Conservation will remove the consequent instability. It will make no difference whether the two names are regarded as different names or as orthographic variants of one name.

891. Vriesia Lindl. (1843) vs. *Vriesea* Lindl. corr. Beer (1857) (5-3) (Taxon 4: 179. 1955.)

This is a proposal to restore the original spelling *Vriesia,* the name having been conserved as *Vriesea.* The name is derived from Vriese, and the spelling *Vriesia* was undoubtedly a deliberate Latinization, not an error, and should have been maintained. However, the "corrected" form *Vriesea* has been generally used.

1050. Nothoscordum Kunth. A proposal to remove the name from the list of nomina conservanda (deconservation) (8-0) (Taxon 3: 21. 1954.)

The committee found the reasons advanced in the proposal entirely cogent.

Presumably no formal action is needed to declare that conservation of a given name is unnecessary. It is a matter of fact, not of expediency. However, it is useful to have such matters on record, and to avoid repetition of bibliographic work such unnecessarily conserved names should either be placed in a special list or included with a special symbol in the list of nomina conservanda.

2261. Suaeda Forsk. (1777) vs. *Dondia* Adans. (1763) (8-0) (Taxon 3: 64. 1954.)

This, like the proposal on *Pterolobium,* is one to change the citation of a name already conserved. *Suaeda* appears first in the Fl. Aegypt.-Arab. xxxviii, cix, 69 (1776), but there is no description of the genus in this work. It is not monotypic, and the specific description of *S. vera* cannot be applied to the generic name. On p. xxxviii the name is assigned to its Linnaean class and order, but this scarcely constitutes a description. The suggested change in citation removes the difficulty (Forsk. ex Scop. Introd. 333).

3424a. Santaloides Schell. (1910) vs. *Kalawael* Adans. (1763) and *Santalodes* O. Kuntze (1891) (8-0) (Taxon 5: 57. 1956.)

Santaloides L. (1747) was revived to include certain species previously assigned to *Rourea*. Unfortunately Kuntze had in the meantime used *Santalodes* (an orthographic variant) as a synonym of *Rourea* and therefore illegitimate. Unfortunately also *Santaloides* L. was based on two of Herman's species, called "kalawael" and "kiridiwael," and agrees best with the former — which is *Derris*. A member of the committee proposed to typify *Santaloides* L. by "kiridiwael"; this would avoid the difficulty; but since the name is "pre-Linnaean" anyhow, it has no status in nomenclature and can be disregarded no matter what its type. *Kalawael* Adans., however, was based on *Santaloides* L. and must be rejected if *Santaloides* Schell. is to be maintained.

3553. Pterolobium R. Br. (1834) vs. *Cantuffa* J. F. Gmel. (1791) (8-0) (Taxon 3: 64. 1954.)

The proposal seeks to change the citation of *Pterolobium* (which is already conserved) on the ground that as cited it is a nomen nudum. As first published by Brown in 1814 (in the appendix to Salt's "Abyssinia"), it was indeed nudum; the publication was simply "Pterolobium lacerans, *Br. MSS.* (Kantuffa, *Bruce*)." The "Kantuffa" referred to is a vernacular name. The citation of the conserved name is, by this proposal, to be changed to R. Br. ex Wight & Arn. Prodr. Fl. Ind. Or. 1: 283 (1834).

3990. Zanthoxylum Mill. (1768) ("Xanthoxylum") vs. *Zanthoxylum* L. (1753) (0-8) (Taxon 4: 237. 1955.)

This was proposed first at the Stockholm congress, and the proposal was rejected by the Stockholm committee. Linnaeus' original *Zanthoxylum* has been generally segregated into two genera, called *Zanthoxylum* and *Fagara*. The Stockholm committee voted to conserve *Fagara* L. over an earlier homonym. This being congeneric with *Zanthoxylum* L. left one genus without a name; it was proposed to conserve *Zanthoxylum* Mill. to fill the gap. But a report to the present committee makes it clear that *Zanthoxylum* Mill. cannot be interpreted as anything other than *Zanthoxylum* L. and *Fagara* L., and that his "Z. americanum" is not what has been recently called by that name (see Taxon 7: 94. 1958). The report suggests that *Zanthoxylum* L. remains as the correct name for either the combined genus or one of its segregates, that *Fagara* L. disappears in the synonymy of the latter, and that the other segregate genus is named *Thylax* Raf. (1830). (There is perhaps a question of typification here, since this last name was described "for Willdenow's *Zanthoxylum fraxineum*," which must remain in the genus *Zanthoxylum* L.).

4111. Simarouba Aubl. (1775) vs. *Simaruba* Boehm. (1760) (8-0) (Syn. Prop. Stockholm 231.)

This proposal was considered by the Stockholm committee but unfortunately thought to be only a question of orthography (the publication containing the original proposal was not available). The committee voted to maintain the original spelling. *Simaruba* Boehm. is typified by *Pistacia simaruba* L. (*Bursera simaruba* Sarg.) but has never been used in this sense.

4152. Garuga Roxb. (1819) vs. *Katou Kalesiam* Adans. (1763) (0-8) (Taxon 3: 124. 1954.)

Katou Kalesiam must be rejected under the code since it consists of two words. Conservation of *Garuga* against it is unnecessary.

4667. Euscaphis Sieb. & Zucc. (1840) vs. *Hebokia* Raf. (1838) (6-2) (Taxon 4: 47. 1955.)

Conservation had been proposed earlier by Rehder, also by a group of Japanese botanists. *Euscaphis* is widely used in floristic works and in works on cultivated plants, while *Hebokia* has never been used. However, the argument that *Hebokia* is inadequately described is beside the point, since it is based on *Sambucus japonica* Thunb., which is well enough known. Moreover the genus is so small as scarcely to merit conservation.

5408. Malacocarpus Salm-Dyck (1850) vs. *Malacocarpus* Fischer & Meyer (1843) (5-3) (Taxon 4: 47. 1955.)

The proposal was well documented and the facts are simple. *Malacocarpus* Fisch. & Meyer is treated as a synonym of *Peganum* L. and has been taken up by no one as a genus. The name is, however, used for a section of *Peganum*, and several members of the committee felt that it is unwise to conserve for a genus a name which is in use for a subdivision of another genus. However, against this it was argued that the "name"

of a section is a combination of a generic name with a sectional epithet; *Malacocarpus* as used for a section of *Peganum* is an epithet. The objection to maintaining *Malacocarpus* Salm-Dyck on this account might be carried further to object to *Digitalis* as having been used as specific epithet of *Penstemon* (or vice versa), and the same for *Lonicera, Lantana, Mollugo,* etc.

5557. Myrteola Berg (1856) vs. *Cluacena* Raf. (1838) and *Amyrsia* Raf. (1838) (8-0) (Taxon 5: 139, 144, 163.)

Conservation had been proposed earlier (Lilloa 13: 146, 147. 1947). The Rafinesquian names have never been used, and are "ill-founded." *Myrteola* is in general use. It is not a large genus.

5583. Syzygium Gaertn. (1788) vs. *Suzygium* P. Br. (1756), *Jambos* Adans. (1763), and *Caryophyllus* L. (1753) (6-2) (Taxon 5: 164, 165. 1956.)

Conservation had been earlier proposed in Mem. Am. Acad. 18: 136 (1939). The two names *Syzygium* and *Suzygium* are either orthographic variants of the same name or differ only in a misprint, but are used in different senses. Gaertner's name is applied to a genus in which 700 or more combinations have been made. Reinstatement of the oldest name, *Caryophyllus,* would necessitate over 650 new combinations. *Jambos* is already rejected as a homonym (orthographically varied) of *Jambosa,* and remains a nomen rejiciendum when *Jambos* is merged with *Syzygium;* to remove doubt it may be mentioned here.

Samyda Jacq. (1760). vs. *Samyda* L. (1753) and *Guidonia* Mill. (1754) (8-0) (Taxon 5: 194. 1956.)

Samyda L. is also proposed for rejection under *Guarea* Allem. nom. cons. (q.v.). It is still necessary to reject it to maintain *Samyda* Jacq. in its current sense. The argument is presented in full by the proposer and was accepted by the committee. *Guidonia* is a nomenclatural synonym of *Samyda* Jacq.

5599. Leptospermum Forst. (1776) (8—0) (Taxon 5: 162. 1956.)

The name was superfluous when published and must therefore be rejected unless conserved. No available synonyms are mentioned by the proposer.

5600. Agonis Lindl. (1839) vs. *Billottia* R. Br. (1832) (Taxon 5: 163. 1956.)

The proposal is to deconserve *Agonis,* since *Billottia* R. Br. is a later homonym of *Billottia* Colla (1824). The committee concurred in the proposal (7-1); but see note under *Nothoscordum* in this report.

5625. Verticordia DC. (1827) vs. *Diplachne* R. Br. (1819) (Taxon 5: 162. 1956.)

Diplachne was not validly published, being mentioned only as a synonym. It is also a later homonym of *Diplachne* Beauv. (1812). See under *Agonis.* The vote of the committee was (8-0).

7000. Astrochlaena Hall. f. (1893) vs. *Asterochlaena* Garcke (1850) (0-8) (Taxon 4: 198. 1955.)

Asterochlaena Corda, applied to a fossil, was overlooked in the proposal. The Committee for Palaeobotanical Nomenclature expressed itself as adverse to any action that would cause the abandonment of this name. It was also suggested that a name should not be conserved if it is correctly used as a sectional epithet in another genus, as *Astrochlaena* (or *Asterochlaena*) is (cf. comment under *Malacocarpus*). Rejection of the proposal, recommended by the committee, will necessitate creation of a new name and some 16 new combinations.

7732. Tabebuia Gomes ex DC. (1838) vs. *Leucoxylon* Raf. (1838), *Proterpia* Raf. (1838), and *Potamoxylon* Raf. (1838) (0-8) (Taxon 4: 44. 1955.)

The proposal was withdrawn since it was found that Rafinesque's *Sylva telluriana,* in which the above names appeared, was published in or later than October 1838, while de Candolle's name was published in September. Conservation is therefore unnecessary.

7741. Dolichandrone Seem. (1862) vs. *Pongelia* Raf. (1838) (7-1) (Taxon 4: 45. 1955.)

The genus is not large (9 species) but at least one species is widely distributed. Rafinesque's name has never been used, nor have any combinations ever been made under it.

7761. Kigelia DC. (1838) vs. *Kigelkeia* Raf. (1838) (0-8) (Taxon 4: 46. 1955.)

See note under *Tabebuia.* The proposal was withdrawn for the same reason, conservation being unnecessary.

7990. Stenandrium Nees (1836) vs. *Gerardia* L. (1754) (8-0) (Taxon 5: 58, 59. 1956.)

Gerardia L. contained several elements, of which *G. tuberosa* was later found to belong to *Stenandrium*. (The type of the latter is not, however, *S. tuberosum* but *S. mandioccanum*, the only one mentioned in the original publication of the genus.) *Gerardia* was typified by J. E. Smith by *G. tuberosa*, but was much used for species of Scrophulariaceae and typified by Hitchcock and Green by *G. purpurea*. In the report to this committee, Smith's selection was upheld (was it really selection of a "type" in the modern nomenclatural sense?); in Taxon 6: 47-49 (1957) the opposite view was maintained. Since *Gerardia* has been much used in the scrophulariaceous sense, it has seemed best to recommend the conservation of *Stenandrium* against it to avoid confusion.

(*to be continued*)

SUMMARY

The following names are recommended for conservation: 424 *Bambusa* Schreb.; 899 *Murdannia* Royle; 951 *Chionographis* Maxim.; 952 *Heloniopsis* A. Gray; 1024 *Kniphofia* Moench; 1166 *Hessea* Herbert; 1189 *Nothofagus* Bl.; 1208 *Hippeastrum* Herbert; 1533 *Bletilla* Reichenb.; 3424a *Santaloides* Schell.; 4111 *Simaruba* Aubl.; 4667 *Euscaphis* Sieb. et Zucc.; 5557 *Myrteola* Berg; 5583 *Syzygium* Gaertn.; *Samyda* Jacq.; 5599 *Leptospermum* Forst.; 6626 *Kopsia* Bl.; 7380 *Dunalia* H.B.K.; 7741 *Dolichandrone* Seem; 7887 *Rechsteineria* Regel; 7990 *Stenandrium* Nees.

The proposals to change the citations of *Pterolobium* R. Br. and *Suaeda* Forsk., nom. cons., are recommended for adoption.

The proposed retypification of 7250 *Plectranthus* l'Hér. is recommended for adoption.

The status of 9304 *Actinella* Pers. is clarified for the benefit of the subcommittee for diatoms.

Removal of the following names from the list of nomina conservanda is recommended: 1050 *Nothoscordum* Kunth; 5600 *Agonis* Lindl.; 5625 *Verticordia* DC.

The committee is opposed to conservation of the following names and recommends that the proposals be rejected: 11 *Pherosphaera* Hook. f.; 18 *Nothotaxus* Florin; 73 *Elisma* Buch.; 204 *Baldingera* Gaertn., Mey. & Scherb.; 209 *Lasiagrostis* Link; 1028 *Apicra* Haw.; 1964 *Conocephalus* Bl.; 2691 *Enneastemon* Exell; 3990 *Zanthoxylum* Mill.; 5408 *Malacocarpus* Salm-Dyck; 7000 *Astrochlaena* Hall. f.

The committee finds conservation of the following names unnecessary and recommends rejection of the proposals: 32A *Sequoiadendron* Buchh.; 87 *Elodea* Rich.; 1048 *Gagea* Salisb.; 1402 *Herminium* R. Br.; 1410p *Gennaria* Parl.; 2896 *Aethionema* R. Br.; 3794 *Cyclocarpa* Afz.; 4152 *Garuga* Roxb.; 4273B *Chamaebuxus* Spach; 4398 *Bernardia* Muell.-Arg.; 6614 *Hunteria* Roxb.; 7727 *Catalpa* Scop.; 7732 *Tabebuia* Gomes; 7761 *Kigelia* DC.; 9052 *Leyssera* L.

The committee is opposed to the proposals that seek to establish the following orthographies: 87 *Helodea* Rich. corr. Reichenb.; 788 *Ambrosinia* L.; 891 *Vriesia* Lindl.; 1401 *Chamaeorchis* L. C. Rich. corr. Koch; 7484 *Chaenorrhinum* Lange (this spelling may be maintained by simple correction without legislative action).

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THE GENERIC NAMES PROPOSED FOR HYMENOMYCETES—VIII*

Auriculariaceae, Septobasidiaceae, Tremellaceae, Dacrymycetaceae

M. A. Donk

(*Ecchyna* Fr. ex Boud.—Cont'd.)

From the preceding account we learn that for a considerable time Fries reserved the name *Ecchyna* for a monstrous fungus which he brought tentatively into relation with *O. faginea,* and that afterwards he used it for *O. faginea* itself. This may mean that he finally considered the abnormal form conspecific with the latter.

Shear & Dodge as well as Weese concluded that Fries never validly published the generic name *Ecchyna.* This opinion seemed well founded at that time. In 1819 Fries had definitely accepted the name (although it was not validly published); in 1849 he emphatically called it a provisional name (but the original branched fungus without heads had already become one, "peridio difformi, strigoso-hirto"); in 1851 he stated—perhaps not quite accurately—that he had proposed *Ecchyna* for a subgenus only. When he adopted the name definitely (and now for *Onygena faginea* without restrictions) in 1857, he did not connect the name with a description which would allow us to consider *Ecchyna* validly published on that occasion if this had not already been performed previously. However, now, that the starting-point date has become 1821 for the fungi under consideration (it may even be 1801 if they are referred to the Gasteromycetes), the publication of the name *Ecchyna* in 1825 has to be carefully scrutinized anew. There, Fries did not say that *Ecchyna* was only provisionally adopted by him, but it might well be a manuscript name "merely mentioned incidentally" and thus would again not be validly published (Art. 33), for he was evidently in grave doubt as to the specific status of the fungus in question. I would rather underline this conclusion, and thus still consider *Ecchyna* as not validly published by Fries.

Boudier (*in* Bull. Soc. mycol. France **1**: 111 footnote. 1885) definitely accepted the name, "... les *Pilacre faginea* et *Petersii* qui sont des *Echyna* Fr." And compare:

> "Les *Pilacre faginea, Petersii* et quelques autres de Berkeley, ne sont pas des *Pilacre* vrais, mais bien des *Ecchyna* et c'est encore ce dernier nom qu'il faut substituer à celui de *Pilacre* ..."
>
> "Bien que dans le Summa vegetabilium [Fries] range encore l'*Ecchyna faginea* parmi les *Onygena* auxquels il reconnaît des spores endothèques, il ajoute à pro-

* Continued from p. 178.

pos de cette espèce une note qui tend à établir le genre *Ecchyna* à capitule villeux et pulvérulent, dépourvu de thèques, dans lequel plus tard il fait rentrer son *Onygena faginea*."—Boudier [*in* J. Bot. (ed. Morot), Paris **2**: 263-264, 261-262. 1888].

Thus, it cannot be contested that Boudier adopted the generic name definitely, but he acted as if it were already validly published by Fries. This not being the case, Boudier can be credited with the authorship if he fulfilled the requirements set for the valid publication of a new name for a new taxon. Such we find in the unconditional acceptance of "*Echyna* Fr." (1885) and in the description quoted (in French) by Boudier (1888) from Fries's "Summa vegetabilium Scandinaviae," which does not relate to *O. faginea* itself but to a fungus ("peridio difformi") Fries considered intermediate between *O. faginea* and *Lasioderma*. This establishes the name '*Ecchyna* Fr. ex Boud.' with this particular fungus as the type species rather than *O. faginea*. Boudier was well aware of the fact that the typical species was not *O. faginea* ("... le genre *Ecchyna* ... dans lequel plus tard [Fries] fait rentrer son *Onygena faginea*") and yet he accepted *Ecchyna* as the correct generic name for the species he had in mind. This shows that he took up Fries's provisional genus of 1849 lock, stock, and barrel to emend it to suit his views.

Some authors have considered Patouillard (Essai taxon. Hym. 17. 1900) the author who first validly published Fries's name. He too, referred to the "Summa," but also furnished a generic description of his own that did not take into account Fries's fungus with the 'deformed peridium.' He divided the genus into a section *Typicae* with "*E. Faginea* Fr., *E. Petersii* (B. & Br.)," and a section "*Pilacrella* Schröt.," with "*E. Solani* (Cohn et Schröt.), *E. delectans* (Möll.)." It seems defensible to ascribe to Patouillard the foundation of a genus '*Ecchyna* Pat. (non Fr.)' with typical *O. faginea* as type species, the name of which would be impriorable in view of the earlier *Ecchyna* Fr. ex Boud.

Remarks. In case the name should be considered validly published by Fries in 1825, one is reminded of the fact that on that occasion the name was based on 'a fungus with horn-like branches but without heads,' apparently a different one from the fungus of 1849 which has heads strigosely hairy, although 'deformed.' '*Ecchyna* Fr. 1825' would be impriorable, for it would have to be valued as a nomen monstrositatis, but in turn '*Ecchyna* Fr. ex Boud.' (and '*Ecchyna* Pat.') would become impriorable, too, as a later homonym of '*Ecchyna* Fr. 1825.' — *Onygena faginea* has been considered a gasteromycetous fungus, e.g. by Fries and more recently by Lohwag (1926) and Greis (*in* Jb. wiss. Bot. **84**: 540, 547, 548-549. 1937). Authors in agreement with this view have to take 1801 as the starting-point date for the nomenclature of this fungus and should take care to establish whether or not *Ecchyna* was after all validly published before 1821. — See also under *Pilacre*.

Variant spelling: "*Echyna*"; Boud. *in* Bull. Soc. mycol. France **1**: 111. 1885 (quoted above); Léon March., Enum. méth. Mycoph. 165. 1896.—At least in the case of Boudier, unintentional errors. — Typonyms: When one considers the type species of *Ecchyna* (see above) conspecific with *Onygena faginea*, both *Phleogena* Link (1833) and *Botryochaete* Corda (1854) become typonyms.

Ecchyna 'Pat.'—See under *Ecchyna* Fr. ex Boud.

Echin-agaricus Haller, Enum. meth. Stirp. Helv. indig. **1**: 32. 1742 (pre-Linnean name). — Von Haller split up the very inclusive genus *Agaricum* Mich. (*Agaricus* Tourn.), separating the stipeless (epixylous) species with spines under the name of *Echin-agaricus*, citing "Ordo *Agaricorum* VI. Michelii p. 122." (Thus he more or less anticipated *Martella* Adans. and *Hericius* Juss., for which see "Hydnaceae.") His definition was "Ab *Erinaceo* differt, quod acaulis sit." He dealt with three species, the first of which is recognizable as *Pseudohydnum gelatinosum* (Scop. ex Fr.) P. Karst. (Tremellaceae). — That species is here selected as the type, which makes *Echin-agaricus* a (not validly published) synonym of *Pseudohydnum* P. Karst. (1868), *Hydnogloea* Curr. apud Berk. & Br. (1871), and *Tremellodon* (Pers.) Fr. (1874).

Eichleriella Bres. *in* Ann. mycol. **1**: 115. 1903. — Etymology: B. Eichler. Gender: f. — Type species (selected): *Eichleriella incarnata* Bres. (Tremellaceae).—Neuhoff [*in* Arch. Bot. **28A** (1): 31. 1936], who had the opportunity to study the type, considered this species synonymous with *Eichleriella spinulosa* (Berk. & C.) Burt. According to Reid (*in* Kew Bull. **1957**: 129, 131) this species has been too inclusively interpreted; the correct name for the European species is *Eichleriella*

deglubens (Berk. & Br.) Lloyd. *Eichleriella incarnata* was described from Italy and belongs perhaps to the latter species. — Scope. Introduced for two species, *Eichleriella incarnata* (first species) and *E. leucophaea* Bres. — Typification. The first species was taken as the type by Burt (*in* Ann. Missouri bot. Gdn **2**: 743. 1915), Clements & Shear (Gen. Fungi 342. 1931), and Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 47. 1944; **19** (3): 65. 1952].

Encephalium Link *per* Brongn. *in* Dict. Sci. nat. **33**: 569. 1824; Essai Classif. nat. Champ. 80. 1825.[22] — Etymology: *ἐγκέφαλος*, brain. Gender: n. — Type species (only original species): *Encephalium aurantiacum* Link (Tremellaceae), a name change for *Tremella encephala* Pers.—This is the same species as *Tremella encephaliformis* Willd. = *Naematelia encephala* (Pers.) per Fr. — Devalidated name: *Encephalium* Link *in* Mag. Ges. naturf. Fr. Berlin **7**: 33. 1816.— Introduced for the one species mentioned above. — Scope. Brongniart accepted Link's name in an unaltered circumscription. He designated the type, calling it "*Tremella encephala* de Willdenow." — Typonym: *Naematelia* Fr. (1822).

Endobasidium Speschnew.—See Exobasidiaceae.

Eocronartium Atk. *in* J. Mycol. **8**: 107. 1902. — Etymology: *ἠώς*, dawn; the genus *Cronartium*. Gender: n. — Type species (only original species): *Eocronartium typhuloides* Atk. = *E. muscicola* (Pers. per Fr.) Fitzp. (Auriculariaceae). — Variant spelling: "*Eucronartium*"; Sacc. & D. Sacc. *in* Sacc., Syll. Fung. **17**: 211. 1905. — Typonyms. It would seem that the type species of *Protopistillaria* J. Rick (1933) and of *Musciclavus* Velen. (1939; not validly published) are conspecific with that of the present name.

Epidochium Fr., Summa Veg. Scand. **2**: 471. 1849. — Etymology: *ἐπί*, on; *δοχεῖον*, fruit-body. Gender: n. — Type species (selected): *Agyrium atrovirens* Fr. (Tremellaceae).—This species is now placed in *Tremella* Fr. — Scope. Introduced with two species the first of which is *Agyrium atrovirens*. — Typification. In agreement with the following note *Agyrium atrovirens* is accepted here as the type species:

> "Die Gattung *Epidochium* Fries ist in ihrem heutigen Umfange eine Mischgattung. Einige Arten sind Tremellineen (darunter auch der Typus der Gattung *E. atrovirens* (Fries)), andere später aufgestellte Arten sind Tubercularieen, wieder andere sind zweifelhafter Stellung."— Von Höhnel [*in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **120**: 464. 1911].

Von Höhnel's choice was accepted by Buchwald (*in* Ärsskr. K. Vet.- og LandbHøjsk. **1949**: 150) and I would rather subscribe to it, too. It is incorrect to state that *Epidochium atrovirens* (Fr.) Fr. had been previously excluded from the genus by Karsten (*in* Hedwigia **31**: 294. 1892). What the latter author did was to introduce a new genus, *Epidochiopsis* P. Karst., to which he transferred the species that he, at an earlier date (Karsten *in* Medd. Soc. Fauna Fl. fenn. **14**: 101. 1887), had described under the misapplied name of *Epidochium atrovirens*. In my opinion, Karsten was well aware of the fact that he had misapplied both names *Epidochium* and *E. atrovirens* and it was exactly to make good that error that he introduced *Epidochiopsis* and *Epidochiopsis atrovirens* P. Karst. (the latter a new name rather than a recombination!). *Epidochiopsis* is a genus of imperfect fungi.

Exidia Fr., Syst. mycol. **2** (1): 220. 1822. — Etymology: *ἐξιδίω*, I exude. Gender: f. — Type species (selected): *Exidia glandulosa* (Bull.) per Fr. sensu Fr. (Tremellaceae).—The devalidated source of the name *Exidia glandulosa* sensu Fr. is *Tremella glandulosa* Bull. This latter fungus is, according to Neuhoff [*in* Pilze Mitteleur. **2a**: 33 (footnote 1), 37. 1936], without a doubt identical with *Exidia truncata* Fr.: the description by Fries as well as all specimens in his herbarium prove that Fries misapplied the name to the species now called *E. glandulosa*. — Scope. When introducing this genus, Fries divided it into two groups: (i) section *Auriculae* Fr., the species of which were later on transferred by himself to *Hirneola*, except "*Exidia Auricula Judae*," the first one (for which see under *Auricularia* Bull. per Mérat. and *Hirneola* Fr. 1848) and (ii) section *Glandulosae* Fr. The generic description contained: "Hymenium persistens, papillis duris prominentibus tectum ..." — Typification. The generic description and the later exclusion of the first section by Fries unambiguously point to the second section as the most typical part. Of this group ('*Glandulosae*'), *E. glandulosa*

[22] Already previously adopted by Persoon (Mycol. europ. **1**: 98. 1822) for a subdivision of *Tremella*.

should be regarded as the type species and consequently also of the generic name. It was already suggested as such by Clements & Shear (Gen. Fungi 341. 1931) and was also selected by Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 57. 1944; **19** (3): 78. 1952]. The fact that Chevalier (1826) restricted the name *Exidia* to the first group and more in particular to the Judas's ear (see under *Spicularia*) is no serious obstacle in view of the generic description. — VARIANT SPELLINGS: "*exidium*"; Letellier, Hist. Descr. Champ. 40. 1826 (incidental mention). — "*Excidia*"; Roum., Crypt. illustr. 73. 1870. — TYPONYM: *Spicularia* Chev. (1826).

Exidiopsis (Bref.) A. Möll. *in* Bot. Mitth. Tropen **8**: 82, 167. 1895. — ETYMOLOGY: The genus *Exidia*; ὄψις, appearance. Gender: f. — TYPE SPECIES (only original species of basinym): *Exidia effusa* Bref. (Tremellaceae). —This species has been identified with *Sebacina uvida* (Fr.) Bres. sensu Bres. According to Lundell (*in* Lund. & Nannf., Fung. exs. suec. Fasc. 29-30: 20 No. 1432. 1947) *Corticium uvidum* Fr. is a synonym of *Corticium lividum* (Pers. per Fr.) Fr. The correct name for the fungus under discussion seems to be *Sebacina effusa* (Bref.) Pat. — BASINYM: *Exidia* subgen. *Exidiopsis* Bref., Unters. Gesammtgeb. Mycol. **7**: 94. 1888.[23]—Introduced for the one species cited above. — SCOPE. When the subgenus was raised to generic rank, the taxon was extended to cover five more species. — REMARK. Shortly after the publication of the subgeneric name by Brefeld, the generic name was used by Vuillemin [*in* Bull. Soc. Sci. Nancy II **10** (Bull. Séances): 30. 1890; *in* C.R. Acad. Sci., Paris **118**: 85. 1894] in two specific combinations, viz. *Exidiopsis quercina* Vuill. and *E. effusa* "Brefeld." The generic name he did not mention separately and it was apparently not validly published by Vuillemin on the two occasions cited; this was first done, as far as I am aware, by A. Möller.

Femsjonia Fr., Summ. Veg. Scand. **2**: 341. 1849. — ETYMOLOGY: Femsjö, a village in Sweden. Gender: f. — TYPE SPECIES (only original species): *Femsjonia luteoalba* Fr. (Dacrymycetaceae).[24] — VARIANT SPELLINGS: "*Femsionia*"; Fr. *in* Nova Acta Soc. Sci. upsal. III **1**: 117. 1851 (= Nov. Symb. 101). —Correctly spelt on page 114 (98). — Bourdot & Galzin (*in* Bull. Soc. mycol. France **25**: 34. 1909) once wrote in error "*Femsjoniana luteo-alba* Fr. . . .." (as a synonym).

Eucronartium.—See *Eocronartium.*

Floricystidium.—See *Anthoseptobasidium.*

Gausapia Fr., Syst. Orb. Veg. 302. 1825. — ETYMOLOGY: gausape, thick, woollen texture, shaggy at one side only. Gender: f. — TYPE SPECIES (only original species): *Thelephora pedicellata* Schw. [: Fr.] = *Septobasidium pedicellatum* (Schw.: Fr.) Pat., as to the type; the species thus called by Patouillard represents *Septobasidium couchi* Donk[25] (Septo-

[23] For the citation of O. Johan-Olsen as 'author,' see page 87.

[24] This species was called *F. radiculata* (Fr.) G. W. Mart. [*in* Stud. nat. Hist. Univ. Iowa **19** (3): 36. 1953], an error soon rectified (Martin *in* Mycologia **44**: 580-582. 1952).

[25] *Septobasidium couchi* Donk (1941) was introduced as a new name for "*Thelephora pedicellata* Schw. sensu Pat." (1892). Patouillard's interpretation of *Septobasidium pedicellatum* (Schw.) Pat. was based on Cuban material reported as *Thelephora pedicellata* Schw. by Berkeley & Curtis [*in* J. Linn. Soc., Lond. (Bot.) **10**: 329. 1868]. After the true *Thelephora pedicellata* was renamed *Septobasidium schweinitzii* Burt, Patouillard's interpretation retained the denomination *S. pedicellatum*. Such a procedure is untenable: (i) the combination "*S. pedicellatum* (Schw.) Pat." (in this form it was published by Patouillard) properly belongs to Von Schweinitz's original fungus, notwithstanding the fact that on the occasion of the introduction of the recombination it was misapplied, and consequently must be retained for Von Schweinitz's fungus instead of *S. schweinitzii*; (ii) the denomination *Thelephora pedicellata* [sensu] Berk. & C., indicating nothing else but a misapplication of an earlier name, has no nomenclatural standing at all, and, therefore, should neither be revived as "*Septobasidium pedicellatum* Patouillard," as was done by Burt, nor as "*Septobasidium pedicellatum* (Berk. & C.) Pat.," as was done by Couch. Thus the fungus so indicated appeared nameless. The essential synonymy of the two species is as follows:

1. *Septobasidium pedicellatum* (Schw.: Fr.) Pat. *in* J. Bot. (ed. Morot), Paris **6**: 61 *textf.* 1892, quoad typus, excl. specim. — *Thelephora pedicellata* Schw. *in* Schr. naturf. Ges. Leipzig **1**: 108 *pl. 2 f. 3.* 1822; Fr., Elench.

basidiaceae). — Remark. For *Gausapia* as dealt with by Fries, Gen. Hym. 13. 1836, see under *Grandinia* ("Hydnaceae"). W. B. Cooke (Gen. Homobas. 38. 1953) listed "*Gausapia* Fr. Gen. Hymen. 13. [1836]" as a genus of Hydnaceae with the first species in the cited publication as type, "*Thelephora granulosa* Fr." (Fries added, "nunc *Hydneum* Persoonia"). — Nomen rejiciendum. See under *Septobasidium*.

Gelatina Rafin. *in* Medic. Repos., New York, 2d Hex. **3**: 423. 1806 (nomen nudum); **5**: 356. 1808; *in* J. Bot. (réd. Soc. Bot.), Paris **2**: 177. 1809 (French translation) (devalidated name). — The generic description (of 1808) runs: "it consists of a jelly almost amorphous, growing upon wood in many states [of the U.S.A.]." The species were called *G. flava* Rafin., *G. aurantiaca* Rafin., *G. rubra* Rafin., and *G. candida* Rafin. (all nomina nuda; mentioned in 1806), and *G. alba* Rafin., *G. foetidissima* Rafin., *G. lutea* Rafin., and *G. candida* (all nomina nuda; mentioned in 1808, when the generic name was accompanied by the description reproduced above). It is possible that *Gelatina* represents a hymenomycetous genus consisting of, or containing, species of *Tremella* Fr. Endlicher (Gen. Pl. 35. 1836; Ench. bot. 20. 1841) listed the name as a synonym of *Exidia* Fr. — *Gelatinaria* Rafin. (1815), q.v., is perhaps a variant of this name.

Gelatinaria Rafin., Anal. Nat. ou Tab. Univ. 211. 1815 (nomen nudum). — Listed as belonging to the "Tremellaria." Perhaps a variant spelling of *Gelatina* Rafin., q.v.

Glenospora Berk. & Desm. *in* J. roy. hort. Soc. **4**: 255. 1849 (description reproduced by Petch *in* Trans. Brit. mycol. Soc. **12**: 105. 1927). — Etymology: *γλήνη*, eye-ball; *σπορά*, seed. Gender: f. — Type species (only original species): *Glenospora curtisii* Berk. & Desm. = *Septobasidium curtisii* (Berk. & Desm.) Boed. & Steinm. (Septobasidiaceae).[26] — Scope. A second, provisional, species tentatively named *Glenospora thwaitesii* was mentioned, but presumably not definitely included. — Remarks. The genus and name were again published at a later date: "*Glenospora* B. & Curt." *apud* Berk. *in* Grevillea **4**: 161. 1876, with one species "*Glenospora Curtisii* B. & Desm." — This generic name has found its way into medical mycology for many totally unrelated fungi. — Petch (*op cit.* pp. 105-113) published a paper on this genus, which should be consulted. — Nomen rejiciendum. See under *Septobasidium*.

1: 200. 1828. — *Septobasidium schweinitzii* Burt *in* Ann. Missouri bot. Gdn **3**: 324 *f. 1.* 1916.

2. **Septobasidium couchi** Donk, *sp. nov.* — *Septobasidium couchi* Donk *in* Bull. bot. Gdns Buitenzorg III **17**: 158. 1941, nomen nudum. — *Septobasidium pedicellatum* (Schw.: Fr.) Pat. sensu Pat. *in* J. Bot. (ed. Morot), Paris **6**: 61 *textf.* 1892.

Fructificationes e filamentis erectis rigidis in fasciculos connatis, in apicibus ramosissimis, gracilioribus et hyalinibus compositae. Probasidia sparsa, lateriter orientia (quoque probasidia infra septum in filamentorum ramulis ultimis posita), globosa, hyalina, basi in stipitem brevem angustata, adulta 20 μ diam. vel 20 $\times$ 15 μ, metabasidia emittentia. Metabasidia cylindrica, apicibus obtusa, soleiformiter curvata, (2—)3-septata, loculis omnibus in latere metabasidii convexo sterigma efformantibus. — Typus: specimen a cl. N. Patouillard visum, receptum sub nomine *Thelephorae pedicellatae* Schw., in insula Cuba a cl. C. Wright collectum. — This is a Latin adaption from Patouillard's description.

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[26] The correct name for this species seems to be:

Septobasidium ramorum (Schw.: Fr.) Donk in Taxon **7**: 164. 1958. — *Racodium ramosum* Schw. *in* Schr. naturf. Ges. Leipzig **1**: 131. 1822 (description reproduced by Petch *in* Trans. Brit. mycol. Soc. **12**: 108. 1927). — *Oedemium ramorum* (Schw.) Fr., Syst. mycol. **3** (2): 345. 1832 (incorrectly? spelt as "ramorum") (basinym).

Glenospora curtisii Berk. & Desm. *in* J. roy. hort. Soc. **4**: 255. 1849. — *Septobasidium curtisii* (Berk. & Desm.) Boedijn & Steinmann *in* Bull. Jard. bot. Buitenzorg III **11**: 181 *fs.* 7-8. 1931.

Note.—The spelling 'ramorum' by Fries may be an unintentional error, for he cited Von Schweinitz's name as "*Racodium ramorum.* Schwein.! Car. n. 1362" instead of as 'ramosum,' but it is still possible that Fries corrected an error.

Gloeosebacina Neuh. *in* Bot. Arch. **8**: 287. 1924. — Etymology: γλοιός, sticky; the genus *Sebacina*. Gender: f. — Type species (selected): *Stypella papillata* A. Möll. (Tremellaceae). — Scope. Introduced for three species: *Stypella papillata* A. Möll., *Exidiopsis cerina* A. Möll., and *Exidiopsis tremellispora* A. Möll., mentioned in this order; a fourth species was considered as probably belonging here, viz. *Tremella palulahuana* Pat. What must be taken as the description assuring the valid publication of the generic name only said that these species differ from *Sebacina* in the presence of gloeocystidia. None of the species was known to Neuhoff by specimens. — Typification. The generic description is of no value in connection with the selection of the type species. As all three original species appear equally eligible, the first of them is here chosen, *Stypella papillata*. — Typonym: *Stypella* A. Möll. (1895).

Gloeosoma Bres.—See "Cyphellaceae."

Gloeotromera Ervin *in* Mycologia **48**: 692. 1956. — Etymology: γλοιός, sticky; τρομερός, trembling. Gender: f. — Type species (by original designation): *Exidiopsis alba* Lloyd (Tremellaceae). — Typonym. See under *Ductifera* Lloyd.

Gloeotulasnella Höhn. & L.—See "Thelephoraceae."

[*Goplana* Racib., Paras. Algen Pilze Java's **2**: 24. 1900.[27] — Type species (only original species): *Goplana micheliae* Racib. — Usually classed in the Uredinales, but sometimes discussed in connection with certain forms of Septobasidiaceae and Auriculariaceae, hence the reason why this name is mentioned here.]

Guepinia Fr., Syst. Orb. Veg. 92. 1825; Elench. **2**: 30. 1828. — Etymology: J. P. Guepin. Gender: f. — Type species (only original species): *Tremella helvelloides* DC. per Pers.: Fr. (Tremellaceae).—I have no doubt that this is (in its original sense as well as in Fries's) the same species as *Tremella rufa* Jacq.; even if one doubts the identity of De Candolle's fungus, there can be no hesitation as to the fungus Fries had in mind. See also under *Gyrocephalus*. — Remarks. Later on Fries (Elench. **2**: 32. 1828) added a second species, *Merulius spathularia* Schw., which belongs to quite a different family (Dacrymycetaceae) from the original one. Several other species of Dacrymycetaceae were gradually added to *Guepinia*, and Clements & Shear (Gen. Fung. 342. 1931) went so far as to suggest *M. spathularia* as the actual type species. On the other hand "*Guepinia*" *helvelloides* is a most striking European fungus and this explains why the generic name still survives in certain European quarters (Patouillard, Tab. anal. Fung. **2**: 70. 1889; Rea; Neuhoff *in* Pilze Mitteleur. **2a**: 50, with extensive discussion) restricted to this species rather than to the dacrymycetaceous element. It is therefore understandable why two different proposals in relation to the name *Guepinia* were moved[28]:

(i) R. Maire (*in* Int. Rules bot. Nomencl., 3. Ausg., 122. 1935) proposed to conserve "*Guepinia* Fr. Elench. II. (1830 [29]) 21, em. Pat. Hym. Eur. (1887) 161.—T.: *G. helvelloides* Fr. l.c." against "*Gyrocephalus* Pers. Mém. Soc. Linn. Pat. (1824) 74, em. Brefeld, Unters. VII. (1889) 130."[30] In this form the proposal contains a number of inaccuracies and omissions. (a) *Guepinia* Fr. was already founded in 1825. (b) *Guepinia* Fr. is improriable on account of the existence of *Guepinia* Bastard 1812, a genus of Cruciferae. If Maire wanted to save *Guepinia* Fr. in its original form he should have mentioned this homonym as a nomen rejiciendum. (c) From Maire's proposal one would gather that *Gyrocephalus* Pers. 1824 is an older synonym and in fact would be the correct name for the genus including *Tremella helvelloides*. Personally I believe that *Gyrocephalus*, q.v., is an earlier typonym of *Gyromitra* Fr. (cf. Donk *in* Bull. bot. Gdns Buitenzorg III **18**: 169-170. 1949). The misapplication of the name for *Guepinia* Fr. was largely due to Brefeld. Donk did not believe that this proposal, even when

[27] Etymology: Goplana, the name of the legendary goddess of Gopto-lake, about 80 km east of Posen (Poland), and commemorated in the Polish dramatic poem "Balladyna."

[28] The following account is mainly adapted from Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 185-186. 1941); and compare Rogers (*in* Farlowia **3**: 446. 1949).

[29] Recte: 1828.

[30] The mention of *Phlogiotis* under *Pilacre* on page 123 is doubtlessly caused by an error of printing. The name was certainly intended as a nomen rejiciendum under *Guepinia*, at the bottom of page 122.

corrected, would serve any much-felt need. Rogers (*in* Farlowia **3**: 445-446. 1949) did not recommend it either. The proposal was rejected by ballot by the Special Committee for Fungi (*in* Taxon **2**: 31. 1953; *in* Mycologia **45**: 320. 1953).

(ii) Another proposal was moved by Martin (*in* Amer. J. Bot. **23**: 629. 1936). He suggested the retention of *Guepinia* Fr. 1828, with the second species, *Merulius spathularia* Schw., as selected type species, against *Guepinia* Fr. 1825 and *Guepinia* Bastard 1812. In a later publication [Martin *in* Stud. nat. Hist. Univ. Iowa **18** (3): 30. 1944] he actually took this species as the type of "*Guepinia* Fries ... 1828 ... not *Guepinia* Fries 1825." If this were not done, Martin argued, *Merulius spathularia* and its allies would be without a valid generic name. All of them had been published in *Guepinia,* so far as he knew. If a new genus were set up for them, it would involve a complete set of new combinations. If, however, *Guepinia* were to be retained, Martin continued, it should be for these species, since there were valid names available for the other genera which have been included under *Guepinia* (viz., *Phlogiotis* Quél. and *Guepinopsis* Pat.). Donk thought this to be the best disposition of the name if it had to be conserved *à tort et à travers.* Votes against this proposal were also cast by Rogers (*l.c.*) and Nannfeldt (*in* Svensk bot. Tidskr. **41**: 334 footnote. 1947), and afterwards Martin (*in* Lloydia **11**: 116. 1948) withdrew the proposal and introduced a new genus for the group, *Dacryopinax* G. W. Mart., q.v., based on *Guepinia elegans* Berk. & C. This second proposal, too, was rejected by ballot by the Special Committee for Fungi (*in* Taxon **2**: 31. 1953; *in* Mycologia **45**: 320. 1953). See also under *Guepinopsis.*

Homonyms: *Guepinia* Bast. (1812; Cruciferae). — *Guepinia* Hepp (*in* Verh. schweiz. naturf. Ges. 48. Versamml. **1864**: 85; Heppiaceae, Lichenes). — Variant spelling: "*Quepinia*"; Corda, Anl. Mykol. cv, 193. 1842. — Typonyms: *Tremiscus* (Pers.) Lév. (1846) and *Phlogiotis* Quél. (1886). And compare *Hepataria* Rafin. (1808; not validly published). — Status. Impriorable on account of the earlier homonym.

Guepinopsis Pat., Tab. anal. Fung. **1**: 27. 1883 (description and illustrations reproduced *in* Rev. mycol. **5**: 192. *pl. 38 f.* 5. 1883). — Etymology: the genus *Guepinia;* ὄψις, appearance. Gender: f. — Type species (only original species): "*Guepinopsis tortus* Pat." sensu Pat. (Dacrymycetaceae).—It is obvious that Patouillard had "*Guepinia*" *merulina* (Pers.) Quél. (sensu Bourd. & G., Hym. France 70), "*Guepinia*" *peziza* L. Tul., in mind. The basinym of "*Guepinopsis tortus*" is apparently *Tremella torta* Willd., or *Dacrymyces tortus* (Willd.) per Fr. (Elench. **2**: 36. 1828): shortly before the publication of *Guepinopsis* the species was described by Doassans & Patouillard (*in* Rev. mycol. **5**: 96. 1883) as "*Tremella torta* Willd. (*Dacrymyces tortus* Fr.)." For a note on Patouillard's specimen, see Martin (*in* Amer. J. Bot. **23**: 628-629. 1936). According to Neuhoff [*in* Ark. Bot. **28**A (1). 1936] the Friesian species comprised *Dacrymyces punctiformis* Neuh. (*op. cit.* p. 45) and *D. romellii* Neuh. (*op. cit.* p. 47). Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 28. 1944] retains Patouillard's name. *Dacrymyces tortus* (Willd.) per Fr. sensu Mass. is according to Neuhoff (*op. cit.* p. 50) the same as *D. cerebriformis* Bref. — Remark. *Guepinopsis* was once proposed for conservation. Donk's note in which he pointed out that the name stands without conservation is reproduced below. Rogers (*in* Farlowia **3**: 446. 1949) came to the same conclusion. Not admitted to a vote (*in* Taxon **2**: 29. 1953; *in* Mycologia **45**: 313. 1953).

> "As has been stated above [see under *Guepinia*] Fries (1825) started *Guepinia* Fr. with one species, '*Tremella helvelloides* DC.' = *Tremella rufa* Jacq. Later on (1828) he added *Merulius spathularia* Schw. and in 1838 (Ep. 566) he introduced a third element: *Guepinia cyphella* Fr. (*Cyphella friesii* Weinm.), viz. a member of Dacrymycetales with cup-shaped fruitbodies and the hymenium lining the 'disc.' He did this with considerable hesitation, for he placed a question mark after the generic appellation!
>
> "Quélet (Ench. Fung. 227, 1886) restricted the name *Guepinia* to this third element. For the latter Patouillard (Tab. An. Fasc. **1**: 27. 1883) had already introduced a new name: *Guepinopsis* Pat., based on one species, '*Guepinopsis tortus*' ... = '*Guepinia*' *merulina* (Pers.) Quél. In later years, Patouillard widened the scope of *Guepinopsis* and entered the members of the *M. spathularia* group; cf. Pat. Ess. Tax. 30, 1900.
>
> "Now R. Maire (ap. Int. Rules bot. Nom., 3. Ausg., 123, 1935) has proposed to conserve *Guepinopsis* Pat. 'Hym. Eur.

(1887) 159' with *'Guepinopsis Spathularia* (Schw.) Pat.' as the type versus *'Guepinia* Fr. Elench. II. (1830) 31, emend. Quél. Enchir. (1886) 227.' In view of what has been stated under *Guepinia* it will be sufficient to indicate in short the imperfections of this proposal:

"(1) The genus does not date from 1887, but already from 1883.

"(2) *Merulius spathularia* can never be the type either of the genus of 1883 or of 1887. In the latter year Patouillard still mentions only one species: 'Espèce principale: *G. merulinus,* etc.', apparently the same for which the genus was introduced and which was called in 1883 *'Guepinopsis tortus.'*

"(3) *Guepinia* Fr. 1828 ... should have been *Guepinia* Fr. 1838, for in 1828 the genus did not yet include any of the species for which Quélet retained the name, as was the case in 1838.

"Even when corrected in accordance with these indications the proposal would appear to be superfluous because *Guepinia* of Quélet is not a validly published name[31] but only a misapplication of an older name and so it can never put aside *Guepinopsis* Pat., which in addition is the older one!"—Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 186-187. 1941).

— VARIANT SPELLING: *"Guepiniopsis"*; Bigeard & Guill., Fl. Champ. sup. France **2**: 510. 1913.

Gyraria C. Nees *ex* S. F. Gray, Nat. Arrang. Brit. Pl. **1**: 593. 1821. — ETYMOLOGY: gyrare, to revolve. Gender: f. — TYPE SPECIES (selected): *Tremella mesenterica* Pers. = *Tremella mesenterica* Retz. per Fr. (Tremellaceae). — PROTONYMS: *Tremella* I. *Gyraria* C. Nees, Syst. Pilze 157. 1816; *Tremella* "stirps" *Gyraria* C. Nees, Syst. Pilze, Ueberbl. 40. 1817; *Gyraria* C. Nees, Syst. Pilze 157. 1816 (nomen provisorium).—Nees von Esenbeck did not definitely raise the taxon to generic rank: he treated it as a part of *Tremella,* but conceived the possibility, in the future, to raise it in rank: "Dann möchte man die Tremellen füglich in drey Gattungen spalten, die ich *Gyraria* (Tremellae plicatae) ... nennen würde." The only species he definitely included in the text, as *"Tremella (Gyraria) mesenterica* Pers. S. F. 622. 1.," he depicted (*pl. 15 f. 142*) as *"Gyraria mesenterica."* — SCOPE. When taken up as a genus by Gray, 12 (British) species were included, of which one with a note of interrogation. These species belong, for instance, to *Tremella* Fr., *Exidia* Fr., *Hirneola* Fr. 1848, *Dacrymyces* C. Nees per Fr.; others are doubtful Hymenomycetes or non-basidiomycetous. — TYPIFICATION. Nees's one original species, which is Gray's first, was indicated as the type by Rogers (*in* Farlowia **3**: 482. 1949). — REMARK. See also "Remark" under *Tremella* Pers. per St.-Am.

[*Gyrocephalus* Pers., Decr. deux Champ. nouv. ... découverts ... par ... Brondeau; suivie d'Obs. ... Gyrocephalus. 1824 (n.v.); *in* Mém. Soc. Linn. Paris **3**: 77. 1824.[32] — Type species (selected): *Gyrocephalus aginnensis* Pers. (basinym, *Helvella sinuosa* Brond.; Helvellaceae, Ascomycetes).— This species was identified by Fries and also by Quélet (*in* Rev. mycol. **14**: 66-67. 1892) with *Gyromitra esculenta* (Pers. per Fr.) Fr. It was pointed out by Donk (*in* Bull. bot. Gdns Buitenzorg III **18**: 169-170. 1949) that for various reasons it ought to be regarded as type species rather than *Gyrocephalus juratensis* Pers. (basinym, *Tremella helvelloides* DC.). — This latter species is a tremellaceous fungus. Persoon's generic name was applied by Brefeld (Unters. Gesammtgeb. Mykol. **7**: 131. 1888) and other authors to the genus of which it is the sole representative; it was even suggested, as *G. rufus* (Jacq.) Bref., as the type species of *Gyrocephalus* by Clements & Shear (Gen. Fungi 342. 1931). See also under *Guepinia* Fr. Such an application is to be rejected. — *Gyrocephalus* was proposed as a nomen rejiciendum to save *Gyromitra* Fr. (1849); compare Donk (*l.c.*) and Rogers (*in* Farlowia **4**: 26. 1950). This proposal was adopted by ballot by the Special Committee for Fungi *in* Taxon **2**: 31. 1953; *in* Mycologia **45**: 318. 1953) and at the Paris Congress (*in* Taxon **4**: 162. 1955).]

Helicobasidion.—See *Helicobasidium.*

Helicobasidium Pat. *in* Bull. Soc. mycol. France **32**: 172. 1885 (descriptio generico-specifica, reproduced *in* Rev. mycol. **8**: 61.

[31] "Even if it was a validly published name it would be impriorable on account of two older homonyms."

[32] Variant spelling: *"Gyrocephalum"*; Costantin *in* J. Bot. (ed. Morot), Paris **1**: 229, 230. 1888.

1886). — Etymology: ἕλιξ, —ικος, twisted; basidium. Gender: n. — Type species (only original species): *Helicobasidium purpureum* Pat.[33] (Auriculariaceae). — Isonym. "*Helicobasis* Pat. . . .; for *Helicobasidium*": Clem. & Shear, Gen. Fungi 341. 1931.—A modification of the name not considered by its authors to represent a new name, but all the same evidently to be valued as an isonym. — Variant spellings: "*Helycobasidium*"; Roum. *in* Rev. mycol. **8**: 146. 1886.—Evidently an error, used in a specific combination. — "*Helicobasidion*": Lindau *in* Engl. & Pr., Nat. PflFam. **1** (1): 84. 1898 (as a synonym). — Typonyms: *Thanatophytum* (C. Nees) ex S. F. Gray (1821; nomen anamorphosis), *Rhizoctonia* DC. per Fr. (1821; nomen anamorphosis), and *Stypinella* J. Schroet. (1888).

Helicobasis Clem. & Shear.—See under *Helicobasidium.*

Helicogloea Pat. *apud* Pat. & Lagerh. *in* Bull. Soc. mycol. France **8**: 121. 1892. — Etymology: ἕλιξ, —ικος, twisted; γλοιός, any sticky substance. Gender: f. — Type species (only original species): *Helicogloea lagerheimi* Pat. apud Pat. & Lagerh. (Auriculariaceae). — Typonym. Compare *Saccoblastia* A. Möll. (1895).

Helycobasidium.—See *Helicobasidium.*

[*Hepataria* Rafin. *in* Medic. Repos., New York, 2d Hex., **5**: 350. 1808 & *in* J. Bot. (réd. Soc. Bot.), Paris **2**: 168. 1809 (French translation) (nomen nudum). — Introduced with two species, *Hepataria erecta* Rafin. and *H. cuneata* Rafin., both nomina nuda. All that we know about *Hepataria* is that it is "very like *Tremella*"; that its author did not list it as belonging to the "mushrooms or fungusses"; and that he ascribed two species to it, the epithets being "erecta" and "cuneata." It would seem impossible to identify what was placed in *Hepataria* with any degree of certainty, but the specific epithets coupled with likeness of the genus to *Tremella* might call to mind *Tremiscus helvelloides* (DC. per Fr.) Donk, which occurs in the general region of the U.S.A. explored by Rafinesque. Yet, it still may belong to the algae, but it is difficult to be more precise. — Reichenbach (Consp. Regni veg. 15. 1828) listed it as a dubious genus of the Tremellaceae; Endlicher (Gen. Pl. 35. 1836), as a synonym of *Exidia* Fr.; Mussat (*in* Sacc., Syll. Fung. **15**: 165. 1901) enumerated it as follows: "*Hepataria* Raf. = *Tremellae* Bull. aff. v. sectio," evidently without accepting the genus. — Reichenbach's mention of the name is in a list headed, "Fungorum genera: / b. ulterius inquirenda." In my opinion he listed this and other names purely as a matter of record, offering no personal opinion about their taxonomic standing: he did not precede them by numbers as he would have done if he had had no decisive misgivings about them. He, thus, did not validly publish these names "ulterius inquirenda," although they are followed by an implicit reference in the form of an author's citation. In this particular case the reference would be valueless since Rafinesque did not publish a description.]

Herpobasidium J. Lind. *in* Ark. Bot. **7** (8): 5. 1908. — Etymology: ἕρπω, I creep; basidium. Gender: n. — Type species (only original species): *Gloeosporium filicinum* Rostr. (Auriculariaceae).

Heterochaete Pat. *apud* Pat. & Lagerh. *in* Bull. Soc. mycol. France **8**: 120. 1892. — Etymology: ἕτερος, different; χαίτη, hair. Gender: f. — Type species (selected): *Heterochaete andina* Pat. & Lagerh. (Tremellaceae). —Compare Bodman (*in* Lloydia **15**: 207. 1952). — Scope. Introduced with two species, *Heterochaete andina* (mentioned first) and *Kneiffia gelatinosa* Berk. & C. — Typification. The first species was suggested by Clements & Shear (Gen. Fungi 342. 1931) and also proposed by Bodman (*in* Mycologia **41**: 529. 1949; *in* Lloydia **15**: 205. 1952) and Martin [*in* Stud. nat. Hist. Univ. Iowa **19** (3): 62. 1952]. It is the one species figured by Patouillard (Essai taxon. Hym. 25 *f. 18.* 1900) to illustrate his genus. — Remark. The fungus name is endangered by *Heterochaeta* DC. (Prod. **5**: 282. 1836; Compositae). The two names are both feminine and it would seem that Art. 75 does not readily support keeping apart the two as non-homonymous: all similar examples appended to the Article differ not only in their termination but also in gender.

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[33] This name (1885) is not a recombination of the earlier *Hypochnus purpureus* L. Tul. (1863). A recombination of the earlier one would result in a later homonym of Patouillard's name, and, hence, would be impriorable. Therefore, the author's citation should not be given as '(Tul.) Pat.' — The correct name appears to be *Helicobasidium brebissonii* (Desm.) Donk (*in* Taxon **7**: 164. 1958).

Heterochaetella (Bourd.) Bourd. & G., Hym. France 51. "1927" [1928]. — Etymology: diminutive of *Heterochaete*. Gender: f. — Type species (selected): *Heterochaete dubia* Bourd. & G. (Tremellaceae). — Basinym: *Sebacina* subgen. *Heterochaetella* Bourd. *in* Trans. Brit. mycol. Soc. **7**: 53. 1920.—This was emphatically introduced as a subgenus, although its species got names with 'Heterochaetella' as the 'generic' appellation. These original species were two. (i) One was already previously described, *Heterochaete dubia:* "This new sub-genus *Heterochaetella* till now only included *H[eterochaetella] dubia* . . ." (ii) The other species was described as a new one, *Heterochaetella crystallina* Bourd. — Scope. The genus included the same two species as the subgenus. — Typification. From the quotation cited above it becomes clear that the type species should be *Heterochaete dubia*. The generic description also emphasizes this choice; "Réceptacle étalé", which is applicable to *Heterochaete dubia* and not to *H. crystallina* ("Petits réceptacles cristallins, . . . densément groupés, obovales substipités"). *Heterochaete dubia* has been cited as type species by Ervin (*in* Mycologia **49**: 121. 1957).

Heteroradulum "McGinty"; Lloyd, Mycol. Writ. **5** (Rad.): 10. 1917; see also Stevenson & Cash *in* Bull. Lloyd Libr. No. 35: 67. 1936. — A name introduced in connection with *Radulum kmetii* Bres. = *Eichleriella deglubens* (Berk. & Br.) Lloyd (Tremellaceae). For the latter name, see under *Eichleriella*. — For some general remarks on the not validly published McGinty names, see Part I of the present series (Donk *in* Reinwardtia **1**: 205. 1951).

Heterotextus Lloyd, Mycol Writ. **7**: 1151. 1922. — Etymology: ἕτερος, different; textus, texture. Gender: m. — Type species (only original species): *Heterotextus flavus* Lloyd (Dacrymycetaceae).—Compare Martin (*in* Mycologia **28**: 219 *f. 2: 8-11.* 1936). — Scope. *Heterotextus* flavus was the only species definitely included. Of three other species Lloyd remarked: "We would enter into the same genus . . .."

Hirneola Fr. *in* Handl. svenska Vetensk-Akad. **1848**: 144 (= Fungi natal. 25. 1848); Summ. Veg. Scand. **2**: 340. 1849. — Etymology: hirneola, small jug. Gender: f. — Type species (by original designation): "*Peziza nigra* Sw." = *Peziza nigricans* Sw. per Fr. (Auriculariaceae).[34]—As far as I could find out, the binomial '*Peziza nigra* Sw.' was never published by Swartz; it is clear that Fries so indicated *Peziza nigrescens* Sw. = *P. nigricans* Sw. At present it is often called *Hirneola polytricha* (Mont.) Fr. or *Auricularia polytricha* (Mont.) Sacc. and *Auricularia nigrescens* (Sw.) Farl. (cf. Barret *in* Mycologia **2**: 15. 1910; Lowy *in* Mycologia **44**: 672. 1952); the correct name under *Hirneola* is *Hirneola nigricans* (Sw. per Hook.: Fr.) Graff ["(Hook.)"]. As far as I know the correct combination (of the epithet 'nigricans') with *Auricularia* has not yet been proposed. — Scope. The genus was introduced on the occasion of the publication of two new species collected by Wahlberg in Natal, South Africa. At the same time a review was given of 14 more species transferred to the genus, while a note on the Judas's ear served to indicate that this species might belong to the genus, although Fries's interpretation of it (as far as the Swedish fungus was concerned) covered a species of *Exidia*. — Remarks. In the original publication Fries captioned the genus "*Hirneola*. Fr. Syst. Orb. Veg. p. 256." On the cited page no indication of this genus is to be found, but on page 93 a monotypic genus *Hirneola* Fr. (1825) is established with *Peziza flava* Sw. as the type species. This quoted reference is not readily understandable because both the generic descriptions and the contents of the two groups are totally different; it might be that Fries wanted to refer to *Hirneola* 1825; but it is more probable that he merely thought he had described his new genus before and mixed it up with the previously described *Hirneola*, also based on a Swartzian, but quite different, species of *Peziza*. The latter conjunction would explain the use of the name; it would also mean that *Hirneola* 1848 was conceived as a new genus. It is significant that next year he dropped the reference (Fries, *l.c.*, 1849). That we are dealing with two different genera (but with homonymous names) is quite likely in my opinion. Starting from 1835 Fries (Fl. scan. 343) abandoned the earlier one of the two, and after 1848 he always cited "Fung. Nat. p. 25" as the place

[34] As to Swartz's type collection, one portion is preserved in Thunberg's herbarium at Upsala and labelled "*Peziza nigricans.* / Dr. Swartz," and another at Lund. A third portion may be expected to be conserved at Stockholm.

of publication of the later name. The reference after the name in 1848 seems after all merely a slip. Another point in favour of this view (which is the one now generally accepted) is that Fries in 1848 emphatically designated *'Peziza nigra'* as the type species of the later name: "typus generis *Hirneolae!*" Compare Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 177. 1941; Summ. Prop. 8. 1950). Rogers (*in* Farlowia **3**: 448-449. 1949) opposes the above interpretation of facts and regards *Hirneola* 1848 a misapplication of *Hirneola* 1825: "This would seem to be a case of 'exclusion of the type'." — Clements & Shear (Gen. Fungi 341. 1931) suggested "*H. auricula-judae* (L.) Berk." as type species of "*Hirneola* Fr. Syst. Orb. Veg. 256. 1825." — VARIANT SPELLING: "*Hirniola*"; Berk. *in* Grevillea **2**: 19. 1873. — HOMONYMS: *Hirneola* Fr. (1825; nomen rejiciendum; "Thelephoraceae") and *Hirneola* Velen. (1939; "Agaricaceae"). — STATUS. Impriorable on account of the earlier homonym. — NOMEN CONSERVANDUM (proposed). Donk (*op. cit.* 1941, pp. 157, 170-171) proposed *Hirneola* Fr. 1848 for conservation against *Hirneola* Fr. 1825 (the earlier homonym) and *Laschia* Fr. (1830), q.v.; this second name was added for the benefit of those authors who want to combine *Laschia* and *Hirneola* 1848. The name has found wide and general application. The proposal was rejected by ballot by the Special Committee for Fungi (*in* Taxon **2**: 31. 1953; *in* Mycologia **45**: 320. 1953). After the voting, but still unaware of its result, Donk (*in* Reinwardtia **1**: 497. 1952) defended it once more and I would insist upon allowing it one more trial, in view of the arguments raised against it. Already eighty years ago the renewed tendency set in to merge the genus in *Auricularia* Bull. [type species, *Au. mesenterica* (Dicks. per Fr.) Fr.]. However, personally I am convinced that the two genera ought to be kept apart: compare Donk (*in* Reinwardtia **1**: 487-500 *2 fs.* 1952). Therefore, I would prefer to continue the use of *Hirneola* 1848. The earlier homonym, *Hirneola* 1825, has not attained any currency and has even been rejected in favour of *Mycobonia* Pat. (1894), q.v. The suppression of the name *Laschia* in favour of *Hirneola* 1848 is desirable for various reasons, the most important of these being that it has been applied to groups very unlike the type, which has even been excluded. Restricted to its type species and perhaps one or two nearly related other species, *Laschia* is a much smaller genus than *Hirneola* 1848 and when combined with it, the dropping of the name *Laschia* does not necessitate new combinations because the typical species have already been recombined under *Hirneola* by Bresadola. Rogers (*l.c.*) was against the proposal, first because he regarded *Hirneola* 1848 a "nomenclatorial nonentity" and, secondly, because he thought the genus "taxonomically superfluous." His first reason is not valid, since the Code does not oppose, and expressely permits, the conservation of a misapplication of a name (Art. 48); even if one wants to regard *Hirneola* 1848 as a misapplied name the proposal is in order! Apart from some erroneous statements, his second reason is inadmissable in nomenclatural discussions: if there are authors who, following Fries's and Bresadola's judgment, are convinced of the validity of the genus, they will proceed to admit it and are free to do so, whatever opposite notions may exist. Rogers implied that the opinion deviating from his own should be discouraged and the taxonomic views of its supporters be combatted with nomenclatorial weapons, even if the result would lead to serious confusion. Obviously, there is both need and possibility for conservation. — See also under *Auricularia*.

Hirneolina (Pat.) Bres. ("in litt.") *apud* Sacc. & D. Sacc. *in* Sacc., Syll. Fung. **17**: 208. 1905. — ETYMOLOGY: diminutive of *Hirneola*. Gender: f. — TYPE SPECIES (only species of basinym): *Sebacina hirneoloides* Pat. (Tremellaceae). — BASINYM: *Sebacina* sect. *Hirneolina* Pat., Essai taxon. Hym. 25. 1900. —Introduced for the one species just mentioned. — SCOPE. The taxon was raised to generic rank with two species, previously described by Bresadola as species of *Eichleriella*, in addition to the one of the basinym. One of these additional species is the type of *Eichleriella* Bres., q.v., viz. *E. incarnata* Bres. The suggestion of selecting *E. incarnata* as the type species of *Hirneolina* by Clements & Shear (Gen. Fungi 342. 1931) is objectionable.

Hoehnelomyces Weese *in* Ber. dtsch. bot. Ges. **37**: 514. 1919. — ETYMOLOGY: F. X. R. von Höhnel; *μύκης*, fungus. Gender: m. — TYPE SPECIES (by original designation): *Hoehnelomyces javanicus* Weese (Auriculariaceae).— Dr. K. B. Boedijn drew my attention to an earlier name for this fungus, the correct name of which is *Hoehnelomyces macrosporus* (Penz. & Sacc.) Boedijn, see page 164. The

types of both specific names were collected at Tjibodas, Java. Penzig & Saccardo's figure clearly shows the auriculariaceous basidia with sessile spores, although not all the cross-walls were drawn in; the heads of the fruit-bodies with the sterile hyphae holding a drop in fresh plants during wet weather are shown, too, but collapsed to a pointed or fimbriate tip. — Scope. Based on two species. — Remark. Clements & Shear (Gen. Fungi 341. 1931) suggested *Pilacrella delectans* A. Möll. as type species; it is precisely the one species which was not explicitly designated as type by Weese.

Hoehnelomycopsis Greis *in* Jb. wiss. Bot. **84**: 547, 548, 551. 1937 (nomen nudum). — Type species (only original species): *Hoehnelomyces javanicus* Weese, the type species by original designation of *Hoehnelomyces* Weese! — The generic name was published without a Latin description or proper reference and was, therefore, not validly published. In any case it is the most perfect example of a superfluous name.

Holtermannia Sacc. & Trav. *in* Sacc., Syll. Fung. **19**: 871. 1910. — Etymology: C. Holtermann. Gender: f. — Type species (same as of basinym): *Clavariopsis pinguis* Holterm. — Basinym: *Clavariopsis* Holterm. (1898), q.v. — Valid publication. By means of references to Holtermann and to Saccardo, Syll. Fung. **16**: 219. 1902 (where Holtermann's genus was compiled), and added to the name of the only species included, rather than to the generic name. — Remark. A name change, the basinym being preoccupied.

Hormomyces Bonord.—See Deuteromycetes.

Hyaloria A. Möll. *in* Bot. Mitth. Tropen **8**: 137, 173. 1895. — Etymology: *ὕαλος*, transparent stone, crystall. Gender: f. — Type species (only original species): *Hyaloria pilacre* A. Möll. (Tremellaceae).—Compare Martin (*in* Mycologia **29**: 620-624 *fs. 10-27.* 1937) for notes on this, or perhaps a closely allied, species. — Variant spelling: "*Hyalosia*": A. Möll. *in* Verh. Ges. dtsch. Naturf. Aerzte, 69. Vers. zu Braunschweig 1897 **2** (1): 151. 1898 (nomen).

Hyalosia.—See *Hyaloria.*

Hydnoglaeum.—See *Hydnogloea.*

Hydnogloea Curr. *apud* Berk. & Br. *in* Ann. Mag. nat. Hist. IV **7**: 429. 1871. — Etymology: the genus *Hydnum*; *γλοιός*, any sticky substance. — Type species (only original species): *Hydnum gelatinosum* Scop. per Fr. — Valid publication. The generic name was introduced as follows:

> "It is quite clear that *Hydnum gelatinosum* does not belong to the same category as normal *Hydna*. The structure is that of *Nematella* [apparently an error for *Naematelia*, also written *Nematelia*]; and Mr. Currey and ourselves propose for it the genus *Hydnogloea* . . .."

I regard this (after considerable hesitation) as a valid publication of the name on account of the differential description: differing from normal *Hydna* in the structure, which is that of *Naematelia* [viz. with tremellaceous basidia]. Currey was well aware of the true kind of basidia as can be gathered from an earlier note [Currey *in* J. Linn. Soc. (Bot.) **5**: 181-182 *textf.* 1861]. — Saccardo (Syll. Fung. **6**: 479. 1888) gives "*Hydnogloeum* Curr. in Berk. N. Amer. Fungi, p. 23" as the place of publication of the name, apparently referring to Berkeley *in* Grevillea **1**: 101. 1873, where *Hydnum gelatinosum* is listed as follows:

> "**Hydnoglaeum gelatinosum* Cur.—No. 2420. Car. Inf. On pine.
>
> "This is *Hydnum gelatinosum*, Scop., but differs materially in the structure from *Hydnum*. There are two or three other species."

As a matter of record I reproduce here another use of the name:

> "Basidia very analogous to those of the *Tremellae* have been observed by Mr. Fred. Currey in a peculiar *Hydnum* . . . *Hydnum gelatinosum* (see the Proceedings of the Linn. Soc. for 1860). But this observation does not seem to invalidate the close analogy of this fungus with the most genuine *Hydna*."—L. & C. Tulasne [*in* J. Linn. Soc. (Bot.) **13**: 35. 1871]. — When the next year the paper in which this passage occurs appeared in French, we find:
>
> ". . . *Hydnum gelatinosum* . . .; cependant elle a déterminé M. Currey et ses amis MM. Berkeley et Broome à faire de ce singulier *Hydnum* gelatineux le type d'une genre spécial, sous le nom

Hydnogloea, et M. Currey doit, paraît-il, faire connaître bientôt une autre espèce du même type."—L. & C. Tulasne [*in* Ann. Sci. nat. (Bot.) V **15**: 222-223. 1872].

Remark. See also "Remark" under *Tremellodon*. — Variant spelling: "*Hydnoglaeum*": Berk. (*l.c.*, 1873); see above for quotation. — Typonyms: *Echin-agaricus* Haller (1742; pre-Linnean name), *Pseudohydnum* P. Karst. (1868; not *Pseudohydnum* J. Rick), and *Tremellodon* (Pers.) Fr. (1874).

[*Hydromyces*.—See *Hydromycus*.]

[*Hydromycus* Rafin. *in* Medic. Repos., New York, 2d Hex., **5**: 356. 1808 & *in* J. de Bot. (réd. Soc. Bot.), Paris **2**: 178. 1809 (French translation) (nomen nudum?). — In case one is willing to admit the distinguishing character from *Tremella* L.,[35] derived from the habitat, as a description, the valid publication depends on what organisms were referred to this genus. It was stated that, "It grows in rivulets or moist places on the roots of trees in New Jersey and Penn[sylvania]," so there is a change that we are dealing here with algae. The species are *Hydromycus aquosus* Rafin. and *H. tremelloides* Rafin., both nomina nuda.[36] — The genus has been placed in the Tremellaceae, for instance by Reichenbach (Consp. Regni veg. 15. 1828; nomen: "*Hydromyces*. Rafin."[37]); Endlicher (Gen. Pl. 34. 1836; Ench. bot. 20. 1841) listed it with doubt as synonym of *Dacry(o)myces* C. Nees; and Mussat (*in* Sacc., Syll. Fung. **15**: 170. 1901) identified it as follows: "*Hydromyces* Raf. = *Dacryomyces* Nees."[37] This is at most a poor guess. — For the time being certainly a nomen dubium. — In my opinion Reichenbach did not validly publish the generic name: the reasons for so doing are the same as discussed under *Hepataria*, q.v.]

[*Hygromitra* C. Nees *ex* Fr., Syst. mycol. **1**: lv. 1821. — Type species (by original designation): *Tremella stipitata* Bosc. This North American species was renamed and is now known as *Leotia viscosa* Fr. For an excellent re-description, see Durand (*in* Ann. mycol. **6**: 449. 1908), under the name *Leotia stipitata* (Bosc) J. Schroet. — Fries (*l.c.*) originally included *Hygromitra* with the Tremellini, but soon made it a special tribe of *Leotia* Fr. (Ascomycetes). The latter generic name is in need of conservation.]

[*Hymenella* Fr., Syst. mycol. **2**: 233. 1822 = *Hymenula*, q.v.].

[*Hymenula* Fr., Elench. **2**: 37. 1828. — Sometimes, especially in older works, placed in the "Tremellinei." It belongs to the imperfect fungi (Tuberculariaceae, Deuteromycetes).]

Hypolepia Rafin.—See Deuteromycetes.

[*Hypsilophora* Berk. *in* Gdnrs' Chron. **11**: 299. 1879 (as *Hypsolophora*).[38, 39] — Instituted for two species previously described under *Dacrymyces*, viz. *D. destructor* Berk. & Rav. (selected type species) and *D. syringicola* Berk. & C. (apud Berkeley *in* Grevillea **2**: 20. 1873). Their hymenomycetous nature is open to question, and it is possible that they are not fungi at all, hence the genus is here excluded. For some notes on the two species, compare Coker (*in* J. Mitchell sci. Soc. **35**: 172. 1920). Berkeley compared the genus with *Dacrymyces* and stated that *Hypsilophora* differed "in the nature of the spore-bearing threads" and proposed the name "from the forked ultimate joints which bear the spores." — The generic name is sometimes ascribed to Kalchbrenner & Cooke, who published *H. coralloides* Kalchb. & Cooke (*in* Grevillea **9**: 19. 1881). A note appended to the description of this species says: "With the habit of *Dacrymyces*, but separated from that genus by Berkeley, in common with two or three North American species, on account of the moniliform threads." This character seems to have induced Saccardo (Syll. Fung. **6**: 812. 1888) to treat *Hypsilophora*, erroneously, as a synonym of *Hormomyces* Bonord., Deuteromycetes.]

[*Hypsolophora*.—See *Hypsilophora*.]

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[35] In the French translation: "Ce Champignon se rapproche de la Tremelle."

[36] In the French translation: "*Hydromycus, tremelloides aquosus* L."

[37] Note the spelling.

[38] Compare Atwood (*in* Mycologia **15**: 103-104. 1923).

[39] In the specific combinations the generic name is correctly spelt.

Iola.—See *Jola.*

Jola A. Möll. *in* Bot. Mitth. Tropen **8**: 22, 162. 1895 — Etymology: *ἴουλος,* down. Gender: f. — Type species (only original species): *Jola hookerianum* A. Möll. (Auriculariaceae).—Compare also Martin (*in* Mycologia **31**: 243. 1939). — Variant spelling. Sometimes also written *"Iola"*; Pat., Essai taxon. Hym. 8. 1900. Perhaps this should be the standard spelling.

Kriegeria Bres. *in* Rev. mycol. **13**: 14. 1891. — Etymology: W. Krieger. Gender: f. Type species (only original species): *Kriegeria eriophori* Bres. (Auriculariaceae). — Homonym: *Kriegeria* Rabenh. *in* Hedwigia **17**: 32. 1878 (Bulgariaceae, Ascomycetes).[40]—When Rabenhorst described *"Ombrophila? Kriegeriana* Rabenhorst n. sp." he remarked:

> "In Bezug auf die Gattung muss ich bemerken, dass ich den Pilz nur vorläufig seiner tremellenartigen Beschaffenheit halber zu *Ombrophila* gestellt habe, es wird besser sein, ein besonderes genus zu bilden, zu dem ich den Namen *Kriegeria* vorschlage und die Species dann mit *olivacea* bezeichne."—Rabenhorst (*op. cit.* pp. 31-32). — This species belongs to *Ruthstroemia elatina* (A. & S. per Fr.) Rehm (cf. White *in* Lloydia **4**: 190. 1941).

This looks too much like the publication of a provisional name, and I agree with Dennis (*in* Kew Bull. **1954**: 410; *in* Mycol. Pap., C.M.I. No. 62: 128. 1956) that *Kriegeria* as published by Rabenhorst is not a validly published name. It was taken up by Von Höhnel [*in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **123**: 114. 1914, as *Kriegeria* "Winter"], and by Seaver (*in* Mycologia **35**: 492. 1943) for *Chloroscypha* Seaver. — Isonym: *Xenogloea* H. & P. Syd. (1919), q.v. — Status. Currently, but incorrectly, considered impriorable on account of the older homonym (see above), and therefore, changed into *Xenogloea.*

Kweilingia Teng *in* Sinensia **11**: 124. 1940. — Etymology: Kwei-ling Teng. Gender: f. — Type species (by original designation and only original species): *Chrysomyxa bambusae* Teng (Auriculariaceae?). — Remark. Originally described as a rust. Thirumalachar & Narasimhan (*in* Sydowia **5**: 476-478. 1951) transferred it to the Auriculariales, but considered it more closely related to the rusts than any other member of the Auriculariales.

Lacryomyces.—See *Dacrymyces.*

Laschia Fr. *in* Linnaea **5**: 533. 1830; Syst. mycol. **3** (Ind.): 107. 1832. — Etymology: W. G. Lasch. Gender: f. — Type species (only original species): *Laschia delicata* Fr. (Auriculariaceae). — Remark. *Laschia* gradually grew out to a large and heterogeneous genus. *'Laschia* Mont. non Fr.' of some authors like Killermann (*in* Engl. & Pr., Nat. PflFam., 2. Aufl., **6**: 202. 1928) and Clements & Shear (Gen. Fungi 347. 1931, 'type species,' *Laschia papulata* Mont.) is not a different genus but a taxon with a misapplied name. Patouillard [*in* J. Bot. (ed. Morot), Paris **1**: 30. 1887], too, emended it with the exclusion of the original species.[41] — Typonym: *Auriculariella* (Sacc.) Clem. (1909), q.v. — Nomen rejiciendum (proposed). See under *Hirneola* Fr. 1848; not *Hirneola* Fr. 1825).

Lascoderma.—See *Lasioderma.*

Lasioderma Mont. *in* Ann. Sci. nat. (Bot.) III **4**: 364. 1845. — Etymology: *λάσιος,* hairy, shaggy; *δέρμα,* skin. Gender: n. — Type species (only original species): *Lasioderma flavovirens* Dur. & Mont. apud Mont.—According to Von Höhnel [*in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **119**: 393. 1910] this is a member of *"Pilacre"* = *Phleogena* Link, and if he were correct, the fungus would belong to the Auriculariaceae. — Variant spelling: *"Lascoderma"*; Bonord. *in* Abh. naturf. Ges. Halle **8**: 71 (reprint-pagination). 1864.

[*Macrostilbum* Pat. *in* Bull. Soc. mycol. France **14**: 197. 1898. — Type species (only original species): *Macrostilbum radicosum* Pat. The author placed the fungus in the

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[40] Von Hoehnel [*in* S.B. Akad. Wien (Math.-nat. Kl., Abt. I) **123**: 114. 1914] erroneously ascribed this generic name to Winter.

[41] Patouillard (*op. cit.* p. 226) considered *Laschia tremellosa* Fr. the (taxonomic) type of the auriculariaceous species which he transferred to *Auricularia* Bull. per Mérat. Of *Laschia* sect. *"Eulaschia"* Pat. (p. 230) the type is *Laschia celebensis* Pat. (cf. p. 226).

'Stilbaceae' (Deuteromycetes). Killermann (*in* Engl. & Pr., Nat. PflFam., 2. Aufl., **6**: 111. 1928) classed it in the Auriculariaceae. As long as Patouillard's opinion has not been demonstrated to be incorrect, I prefer to regard it as non-basidiomycetous.]

[*Meria* Vuill. *in* C.R. Acad. Sci., Paris **122**: 546. 1896; *in* Bull. Soc. Sci. Nancy II **14**: 32. 1896. — Type species (only original species): *Meria laricis* Vuill.—The conidiophores as described and depicted[42] look very much like auriculariaceous basidia, but there seems no doubt that the fungus belongs to the imperfect fungi (Deuteromycetes); compare also Peace & Holmes (*in* Oxford For. Mem. No. 15: 7. 1933) and Drechsler (*in* Phytopathology **31**: 787-793. 1941). — Typonyms: *Allescheria* Hartig *in* Cbl. Forstw. **25**: 423. 1899 (*n.v.*: not *Allescheria* Sacc. & Syd. 1899); *Hartigiella* Syd. *apud* Lindau *in* Engl. & Pr., Nat. PflFam. **1** (1**): 558. 1899 (isonym of preceding name).]

Metabourdotia L. Olive *in* Amer. J. Bot. **44**: 429. 1957. — Etymology: *μετά*, coming after; the genus *Bourdotia*. Gender: f. — Type species (by original designation and only original species): *Metabourdotia tahitiensis* L. Olive (Tremellaceae).—Judging from the description this species may appear to be close to, or perhaps even conspecific with, *Sebacina caesiocinerea* (Höhn. & L.) D. P. Rog. as originally described by Von Höhnel & Litschauer. — Remark. Olive thinks the genus to be related to *Ceratobasidium* D. P. Rog., with non-septate basidia, and does not include it in the Tremellaceae.

Moematelia.—See *Naematelia*.

Mohortia Racib. *in* Bull. int. Acad. Cracovie (Cl. Sci. math. nat.) **3**: 361. 1909. — Etymology: —. Gender: f. — Type species (only original species): *Mohortia tropica* Racib. (Septobasidiaceae).—An insufficiently known species now considered to belong to *Septobasidium*; not mentioned by Couch (Genus Septob. 1938).

Musciclavus Velen., Novit. mycol. 166. 1939. — The following note was added to the (Latin) description of the new species *Clavaria falcatispora* Velen.: "Ab omnibus *Clavariis* notis sporarum forma differt. Forsan in symbiosi cum muscis vivens. Certe sistit genus novum, quoad nomine provisorio designo *Musciclavus* m." A provisional name and hence not validly published. — There can be no doubt that the species belongs to *Eocronartium muscicola* (Pers. per Fr.) Fitzp. — Typonyms: *Eocronartium* Atk. (1902) and *Protopistillaria* J. Rick (1933).

Mycelitopsis.—See *Mylittopsis*.

Mycobonia Pat.—See "Thelephoraceae."

Mycogloea L. Olive *in* Mycologia **42**: 385. 1950. — Etymology: *μύκης*, fungus; *γλοιός*, any sticky substance. Gender: f. — Type species (by original designation and only original species): *Mycogloea carnosa* L. Olive (Auriculariaceae).

Myklichenia G. Raddi.—See "Thelephoraceae," Addenda.

Mylittopsis Pat. *in* J. Bot. (ed Morot), Paris **9**: 247. 1895. — Etymology: the genus *Mylitta*; *ὄψις*, appearance. Gender: f. — Type species (only original species): *Mylittopsis langloisii* Pat. = *Mylittopsis marmorata* (Berk. & C. apud Berk.) Rogers & Martin (*in* Mycologia **47**: 891-894. 1955) (Auriculariaceae).—Von Höhnel (*in* Ann. mycol. **15**: 295. 1917) reduced this species provisionally to *Tremella fragiformis* var. *carpinea* A. & S. (*Dacrymyces macrosporus* Berk. & Br.). His conclusion seems highly questionable. — Variant spelling: "*Mycelitopsis* Pat."; Léon March., Enum. méth. Mycoph. 197. 1896.— An error.

"*Myxacium*" Wallr.—See *Myxarium*.

Myxarium Wallr., Fl. crypt. Germ. **2**: 260. 1833. — Etymology: *μύξα*, mucus. Gender: n. — Type species (only original species): *Myxarium nucleatum* Wallr. (Tremellaceae). —This species is now regarded as a synonym of *Exidia gemmata* (Lév.) Bourd. & L. Maire: compare Neuhoff (*in* Pilze Mitteleurop. **2a**: 29. 1936). — Variant spelling: "*Myxacium*"; Lév., Consid. mycol. 108. 1846; *in* Orb., Dict. univ. Hist. nat. **8**: 487. 1846.—Not to confuse with *Myxacium* (Fr.) Kummer ("Agaricaceae").

(*to be continued*)

[42] For illustrations, see Vuillemin (*op. cit.*, Bull., *pl. 1*; *in* Ann. mycol. **3**: 341 *fs. 1-4.* 1905) and Lindau (*in* Rabenh. Krypt.-Fl., 2. Aufl., VIII. Abt., **1**: 260 *fig. 1905*).

NEWS AND NOTES

BRUXELLES

Inauguration du nouveau Jardin Botanique de l'État à Meise

Les Ministres de l'Agriculture et des Travaux Publics ont procédé officiellement, le mardi 15 avril 1958, à l'ouverture solenelle du nouveau Jardin Botanique de l'État à Meise, en présence de nombreuses personnalités du monde politique, administratif, scientifique, universitaire et colonial.

A l'occasion du premier vol de la Trans-Canada Air Lines, un plant d'*Acer saccharum* y avait été planté la veille sous le signe de l'amitié Belgo-Canadienne et, de ce fait, une délégation de la Police Montée Royale Canadienne assista à la cérémonie.

Cette dernière se déroula sur le parvis du Palais des Plantes et débuta par le discours du Professeur Robyns, Directeur du Jardin Botanique de l'État, qui retraça l'historique du nouveau Jardin.

Ce fut le 23 décembre 1938 que l'État belge fit l'acquisition du domaine Royal de Bouchout, d'une superficie de 91 Ha. 23a. situé à Meise, aux portes de Bruxelles.

L'aménagement du nouveau Jardin commença en 1939, mais il fut interrompu pendant toute la durée de la seconde guerre mondiale.

Actuellement les installations du service des cultures, à savoir: le Palais des Plantes, les serres de cultures, la station de pompage, le bâtiment du chauffage et l'ancienne orangerie transformée en restaurant, sont pratiquement achevées, de même que les grands travaux de terrassement et l'aménagement de vastes pelouses.

Le Directeur remercia tous ceux qui ont collaboré à cette oeuvre et termina par le souhait de voir doter le nouveau Jardin d'un cadre scientifique et technique approprié.

M. Vanaudenhove, Ministre des Travaux Publics, souligna l'importance des diverses constructions érigées par son département et remercia tous ses collaborateurs.

M. R. Lefèbvre, Ministre de l'Agriculture, après avoir expliqué l'importance de la cérémonie de ce jour, s'attacha à définir le rôle du nouveau Jardin Botanique de l'État à la fois dans le domaine de la recherche scientifique, de la recherche agricole et horticole, de la conservation des espèces naturelles en voie de disparition et de l'éducation du public.

Les deux ministres dévoilèrent ensuite deux plaques commémoratives, respectivement en français et en flamand, apposées à l'entrée du grandiose Palais des Plantes.

Le dernier acte consistait dans la plantation d'un jeune *Cedrus atlantica glauca* de semis (1947), en commémoration de la cérémonie de ce jour.

A l'occasion de l'Exposition Universelle de Bruxelles et en attendant l'achèvement des constructions encore à ériger, à savoir: le bâtiment de l'Herbarium et celui des Musées, une partie du Parc est provisoirement ouverte au public qui peut y admirer les collections magnifiques d'arbres séculaires qui ornent le domaine.

W. Robyns.

SYSTEMATICS OF TO-DAY

Systematics of to-day, Uppsala Universitets Årsskrift 1958: 6 (Acta Universitatis Upsaliensis) — Proceedings of a symposium held at the University of Uppsala in commemoration of the 250th anniversary of the birth of Carolus Linnaeus. — Edited by Olov Hedberg — Uppsala (A.-B. Lundequistska Bokhandeln), Wiesbaden (Otto Harrassowitz).

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of the Belgian Congo

Flore du Congo Belge et du Ruanda-Urundi. Spermatophytes, Vol. 7. (*Pandaceae-Callitrichaceae*, by various authors). Bruxelles, 1958. (367 p., 1 map, 11 figs., 26 plates).

Flora of North Africa

R. Maire†: Flore de l'Afrique du Nord V. (*Liliaceae*). P. Lechevalier, Paris, 1958. (307 pp., figs. 745-923).

Flora of Madagascar

M. Tardieu-Blot: Flore de Madagascar et des Comores. 5. (vol. I). Polypodiacées (sensu lato) (5_1Dennstaedtiacées — 5_{10}Aspidiacées). Paris, 1958. (391 pp., 51 figs.).

Flora of the marshes of California

H. L. Mason: A flora of the marshes of California. Univ. of California Press, Berkeley/Los Angeles, 1957. (viii + 878 pp., 367 figs.; with keys, descriptions, notes on habitat and distribution; deals with all vascular plants).

Flora of Manitoba

H. J. Scoggan: Flora of Manitoba. Publ. as vol. 140 (Biol. Ser. No. 47) of the Bulletin of the National Museum of Canada, Ottawa, 1957. Price $ 5.00. (vi + 619 pp., 1 map, 8 plates; an enumeration with keys, notes on distribution and general range, and bibliography; includes all vascular plants).

Flora of San Francisco

J. T. Howell, P. H. Raven & P. Rubtzoff: A flora of San Francisco, California. Publ. by the University of San Francisco, Calif., 1958. Price $ 3.00. (157 pp., 19 figs.; an annotated catalogue with general introduction).

Flora of Belgium

J. Legrain: Flore Générale de Belgique. III — 1. *Rosaceae* (*Rubus* — part). Bruxelles, 1958. (pp. 1-152, 8 figs. and maps).

Atlas of the Flora of Poland

J. Madalski: Atlas flory polskiej i ziem ościennych. Vol. VII — pt. I. *Chenopodiaceae* (pt. I). Warsaw-Breslau, 1957. (33 plates by T. Kowal).

Flora of the Leningrad Region

Flora Leningradskoj oblasti. Ed. by B. K. Šiškin. II. *Salicaceae-Saxifragaceae*. Leningrad Univ., 1957. (242 pp., 1 map).

Fungi of Portugal

E. de Sousa da Camara†: Catalogus systematicus fungorum omnium Lusitaniae. I. *Basidiomycetes*. 1. *Hymeniales*. Lisboa, 1956. (347 pp.; an enumeration, with synonymy and distribution in Portugal).

Poisonous plants of North Australia

Poisonous plants of the Northern Territory. 1. Introduction. 2. Ferns to Mimosas. Publ. as Extension Articles No. 2 pt. I and II by the Animal Industry Branch, Northern Territory Administration, 1956 and 1957. (20 and 51 pp., with photographs in colour and black and white and drawings.).

Amaryllis monograph

H. P. Traub: The *Amaryllis* Manual. Publ. by the Macmillan Company, New York, 1958. (322 pp., 32 ill.; deals with history, anatomy, and economic botany of the genus, includes also a chromosome catalog, notes on taxonomy and nomenclature, key and descriptions of species).

Mycological and lichenological bibliography

R. Ciferri: Supplementum (1911-1930), E-K, to: G. Lindau & P. Sydow, Thesaurus literaturae mycologicae et lichenologicae. Papia, Cortina, Italy, 1958. (pp. 690-1476).

Atlas of pollen grains

H. A. Hyde & K. F. Adams: An atlas of airborne pollen grains. Macmillan & Co., London, 1958. (xvi + 112 pp., 190 photographs).

* * *

Monographs, revisions, etc., published in periodicals.

F. A. Barkley: Generic key to the Sumac Family (*Anacardiaceae*). Lloydia 20(4): 255-265 (1957). (With notes on synonymy).

J. W. Baxter: The genus *Cumminsiella*. Mycologia 49: 864-873 (1957). (With key).

R. C. Bhadwaja: Genus *Gnetum* Linn. in India, Pakistan and Burma. Jo. Indian bot. Soc. 36: 408-420 (1957). (With key).

C. E. B. Bremekamp: Monographie des genres *Cremocarpon* Boiv. ex Baill. et *Pyragra* Brem. (Rubiacées). Candollea 16: 147-177 (1958). (With keys and descriptions).

J. P. M. Brenan & A. W. Exell: *Acacia pennata* (L.) Willd. and its relatives in Tropical Africa. Bol. Soc. Broter. 2A Sér. 31: 99-140 (1957). (With key, descriptions, and illustrations).

A. C. van Bruggen: Revision of the *Sapotaceae* of the Malaysian area in a wider sense. XV. *Payena* A. DeCandolle. XVI. *Aesandra* Pierre. Blumea 9(1): 89-138; 139-142 (1958). (With key, descriptions, and illustrations).

J. Cuatrecasas: Notes on American *Solanaceae*. Fedde Rep. 61(1): 74-86 (1958). (Contains a concise revision of *Markea*).

A. & R. Fernandes: Contribuição para o conhecimento das *Passifloraceae* da Guiné Portuguesa. Garcia de Orta 5(4): 705-710 (1957). (An enumeration, with keys).

— —: Contribuição para o conhecimento das *Onagraceae* de Moçambique. Ibid. 5(1):

109-119 (1957). (An enumeration, with keys and photographs).

A. Fernandes & M. A. Diniz: Contribuição para o conhecimento das *Samydaceae* da Guiné Portuguesa e de Moçambique. Ibid. 5(2): 247-252 (1957). (An enumeration, with keys and photographs).

R. C. Foster: A catalogue of the ferns and flowering plants of Bolivia. Contr. Gray Herb. 184: 1-223 (1958). (An enumeration of names with bibliography, without synonymy).

J. B. Gillett: *Indigofera* (*Microcharis*) in Tropical Africa with the related genera *Cyamopsis* and *Rhynchotropis*. Kew Bull. Addit. Ser. I: 1-166 (1958). (With keys and tables of distribution).

H. Huber: Revision der Gattung *Ceropegia*. Mem. Soc. Broter. 12: 5-203 (1957). (With keys, descriptions, enumerations of specimens and index of exsiccatae, drawings, and maps; largely in Latin).

J. Ingram: Studies in the cultivated *Boraginaceae*. 1. *Lithospermum* and related genera. Baileya 6(2): 90-100 (1958). (With illustrations, and keys to *Lithospermum, Lithodora, Moltkia,* and *Buglossoides*).

Z. Iwatsuki: Review of the genus *Homaliadelphus*. The Bryologist 61(1): 68-78 (1958). (With key, descriptions, and figures).

M. C. Johnston: Synopsis of the United States species of *Forestiera* (*Oleaceae*). S.W. Natural. 2(4): 140-151 (1957). (With key).

A. J. G. H. Kostermans: A monograph of the genus *Durio* Adans. (*Bombacaceae*). Part II. Species of Burma, Malaya and Sumatra. Publ. as Communic. No. 62 of the Forest Research Institute, Bogor, Indonesia, 1958, p. 1-33. (With key, descriptions, index of exsiccatae, illustrations, and map).

——: Le genre *Ravensara* Sonn. (Lauracées) à Madagascar. Bull. Jard. Bot. Brux. 28(2): 173-191 (1958). (An enumeration, with photographs of new species).

T. Kowal: Studia nad morfologia owoców europejskich rod zajów podrodzin *Scirpoideae* Pax, *Rhynchosporoideae* Aschers. & Graebner i cześci *Caricoideae* Pax. A study on the morphology of fruits of European genera from the subfamilies *Scirpoideae* Pax, *Rhynchosporoideae* Aschers. & Graebner and some genera of *Caricoideae* Pax. Monograph. Botan. 6: 97-149 (1958). (With keys and figures; in Polish).

H. J. Lam: Revision of the *Burseraceae* of the Malaysian area in a wider sense. Vb. *Haplolobus*, a revised revision. Blumea 9(1): 237-272 (1958). (With key and illustrations).

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S. Marek: Studia nad anatomia owoców europejskich rodzajów podrodzin: *Scirpoideae* Pax, *Rhynchosporoideae* Aschers. & Graebner i cześci *Caricoideae* Pax. A study on the anatomy of fruits of European genera in the subfamilies *Scirpoideae* Pax, *Rhynchosporoideae* Aschers. & Graebner and some genera of *Caricoideae* Pax. Monograph. Botan. 6: 151-189 (1958). (With keys and figures; in Polish).

——: Europejskie rodzaje rodziny *Polygonaceae* w świetle wyników badań nad morfologia i anatomia owoców i nasion. European genera of *Polygonaceae* in the light of anatomical and morphological investigations on their fruits and seeds. Ibid. 57-95 (1958). (With keys and drawings; in Polish).

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E. Paunero: Las Andropogoneas españolas. Anal. Inst. Bot. A. J. Cavanilles 15: 417-459 (1957). (With keys, descriptions, drawings, and photographs).

C. S. Ramamurthi, R. P. Korf & L. R. Batra: A revision of the North American species of *Chlorociboria* (*Sclerotimaceae*). Mycologia 49: 854-863 (1957). (With key).

B. A. Razi: An annotated list of phanerogamic parasites from India and Pakistan. Lloydia 20(4): 238-254 (1957).

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R. E. Schultes: A synopsis of the genus *Herrania*. Jo. Arnold Arbor. 39(3): 216-295 (1958). (A monograph with key, descriptions, enumerations of specimens, notes on ecology, drawings, and photographs).

R. M. Schuster: Notes on nearctic *Hepaticae*. XIII. The genus *Tritomaria* (*Lophoziaceae*) in Arctic Canada. Canad. Jo. Bot. 36: 269-288 (1958). (With key).

——: Keys to the orders, families and genera of *Hepaticae* of America north of Mexico. The Bryologist 61(1): 1-66 (1958). (With annotations, notes on classification, and illustrations).

R. Singer: New genera of Fungi. VIII. Notes concerning the sections of the genus *Marasmius* Fr. Mycologia 50: 103-110 (1958). (With key).

W. T. Stearn: A key to West Indian Mangroves. Kew Bull. 1958(1): 33-37.

W. Vink: Revision of the *Sapotaceae* of the Malaysian area in a wider sense. XIII. *Chrysophyllum* L. Blumea 9(1): 21-74 (1958). (With key, descriptions, and illustrations).

U. T. Waterfall: A taxonomic study of the genus *Physalis* in North America north of Mexico. Rhodora 60 (No. 712): 107-114; (No. 713): 128-142; (No. 714): 152-173 (1958). (With key, descriptions, and enumerations of specimens).

B. Wojciechowska: Systematyka, morfologia i anatomia owoców i nasion rodzaju *Salvia* L. Taxonomy, morphology, and anatomy of fruits and seeds in the genus *Salvia* L. Monograph. Botan. 6: 3-55 (1958). (With key and illustrations; in Polish).

C. E. Wood, Jr.: The genera of the woody *Ranales* in the southeastern United States. Jo. Arnold Arbor. 39(3): 296-346 (1958).

R. E. Woodson, Jr., & P. W. Schery: Flora of Panama, Pt. VII, fasc. 1. *Passifloraceae, Caricaceae, Loasaceae, Begoniaceae* (by L. B. Smith & B. G. Schubert), *Cactaceae*. Ann. Mo. Bot. Gard. 45(1): 1-91 (1958).

R. van der Wijk: Precursory studies on Malaysian mosses. II. A preliminary key to the moss genera. Blumea 9(1): 143-186 (1958).

D. P. Young: Le genre *Epipactis* en Belgique. Bull. Jard. Bot. Brux. 28(2): 123-127 (1958). (With key).

A.E.T.F.A.T.-INDEX 1957

L'A.E.T.F.A.T.-INDEX 1957 est sorti de presse. Conçu de la même façon que les précédents, il contient tout ce qui a paru durant l'année 1957 concernant la botanique systématique africaine et malgache prise au sens large.

L'A.E.T.F.A.T.-INDEX mentionne, en plus des taxa nouveaux, les divisions infraspécifiques, les basionymes des combinaisons nouvelles avec renvoi à la combinaison, l'iconographie ainsi que de nombreuses références de révisions et de travaux intéressants au point de vue taxonomique.

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On peut se le procurer en écrivant à:

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M. A. A. Bullock, Royal Botanic Gardens, Kew, Richmond, Surrey, England.

* * *

The publication is announced of the *A.E.T.F.A.T.-INDEX* 1957. This *INDEX* contains references to all that has been published during 1957 on the taxonomic botany in a wide sense of Africa and Madagascar.

The *A.E.T.F.A.T.-INDEX* mentions new taxa, including infraspecific divisions, the basionyms of new combinations with references to the place of publication, the iconography; it also gives references to revisions and papers of taxonomic interest.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.
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ON LAW, ORDER, AND FAMILY

J. Proskauer (Berkeley, Calif.)

"It has long been known that many of the more commonly used names of plant Families are illegitimate." This opening statement of Bullock's (1958) recent contribution on the names of angiosperm families is echoed loudly from the cryptogamic side. Experience shows that only too frequently an attempt to determine the correct name of a family leads into a quagmire and to a ludicrous result, from which "conservation" becomes the only means of extrication. Our legislation at the level of genus and below has of late been carefully clarified and improved, but nomenclature above the level of genus has been subjected to much less scrutiny. Principles excellent when applied at the level of genus in practice may not be sound when applied at the level of family. In particular the impact of the type method on suprageneric categories seems to have received inadequate attention. Our legislation in simple logic states that each taxon of ordinal or lower rank (except for 9 specified families) can bear only one correct name. Thus a genus can only have one correct name. But while we demand that the name of a family, and in turn that of an order, has to be derived from the name of a genus within it, we by some extra-ordinary reasoning do not demand that this be a *correct* name — any name will do, correct or "incorrect", as long as it was published in acceptable manner. Thus we flout Occam's razor — "Essentia non sunt multiplicanda praeter necessitatem" — and doing so we automatically court unnecessary trouble.

The following examples show where our current rules lead us. They are also useful for checking quickly the practical meaning of the proposals made below. (Some irrelevant, because later, synonyms have been omitted.)

Example 1 (cf. Proskauer, 1958, p. 1303).

1821. *Anthocerideae* S. F. Gray, Nat. arr. Brit. plants 1 : 678, 681.
(As the subdivision "C" of the "family" *Hepaticae;* with diagnosis. The word "family" is to be taken literally in the current taxonomic sense, the "families" of cryptogams having to be accepted at the same value as other "families" in the work, such as *Convolvulaceae* and *Cucurbitaceae*, which are essentially employed in their current senses.)

1833. *Anthoceroteae* Nees v. Esenbeck, Naturg. europ. Leberm. 1 : 86.
(As "tribe" in the "family" *Hepaticae;* with diagnosis. Seemingly he combined the liverwort family and the "family" *Sphagnaceae* into an "order" (cf. p. 83). In the light of the footnote on p. 83 I am inclined to take Nees at his word and accept his name in the rank of tribe: it is indeed even "correct" in form.)

COMMONWEALTH MYCOLOGICAL INSTITUTE
20 OCT 1958

1822. *Carpocereae* DuMortier, Comment. bot., pp. 68, 76. (As "family"; with diagnosis.)

1829. *Anthocereae* DuMortier, Anal. fam. pl., pp. 68, 69. (As "family"; with diagnosis.)

1842. *Anthocerotaceae* Trevisan, Prosp. flora euganea, p. 47. (As "order" in the "class" *Hepaticae;* without diagnosis, but included genus listed.)

All names derived from the genus *Anthoceros* [Micheli] L. This name seemed idiotic even in the 18th century. Micheli already toyed with substitutes (fide his note-books), Linné half heartedly coined the obvious but illegitimate substitute *Ceranthus* (unknown to him Micheli had already thought of *Cerantia*), DuMortier coined and *used* the illegitimate substitute *Carpoceros* in 1822, but quietly abandoned it himself by 1829. Stems: *Anthocerot-* and *Carpocerot-*respectively.

Proceeding by Articles 11, 6, and 18 of the 1956 Code, we find that we have to select at the rank of family the name *Carpocereae* DuMortier, and make the correction for suffix. According to Article 73 we better make the orthographic correction for the stem as well, obtaining Fam. *Carpocerotaceae* DuMortier corr. (N.B. I am just illustrating; invalid sub Article 33.) As the family has off and on been credited with various subdivisions (typified by the included genera *Dendroceros* and *Notothylas*) we need further parallel names; for the subfamily the 1821 S. F. Gray name may serve: *Anthocerotoideae* S. F. Gray corr. nov., for the tribe priority rests with *Anthoceroteae* Nees, 1833. Note that *Carpoceros* and *Anthoceros* have the same type.

As it would be perfectly ridiculous to foist the name *Carpocerotaceae* on the family generally known as *Anthocerotaceae* [the only author, besides DuMortier, who actually used *Carpocereae* was Martius (Nees in Martius, 1833, p. 303; Martius, 1835, p. 2)], the only recourse would be conservation. On top of it the following higher categories based on *Anthoceros* have been validly proposed: *Anthocerophyta* Rothmaler, *Anthocerotopsida* de Bary ex Janczewski corr. Proskauer, *Anthocerotidae* Rosenvinge corr. Proskauer, and *Anthocerotales* (original author still obscure). What I did in practice (Proskauer, 1958, p. 1303) was to write *Anthocerotaceae* (S. F. Gray) DuMortier corr. Trevisan, implying that DuMortier, instead of erecting the family *Carpocereae* de novo (the fact that he changed it later to *Anthocereae* is actually irrelevant, as the same type is involved) should have picked up S. F. Gray's basionym (of which he probably did not know), and that Trevisan should be credited with making a correction in 1842 quite in accordance of style, etc., with a code promulgated a hundred years later, except that he did not cite either Gray or DuMortier, and further that when he wrote "order" he meant family.

Example 2 (cf. Kachroo, 1958, p. 23).

1837. *Rebouilliariae* H. G. L. Reichenbach, Handb. nat Pflanzensyst. p. 137. (As a subgroup of the "family" *Marchantiaceae;* without diagnosis.)

1841. *Grimaldieae* H. G. L. Reichenbach, Der deutsche Botaniker 1: Nomenclator: 24 (not seen; fide Trevisan, 1877); also in Rabenhorst, Krypt.-Fl. 2: 3: 6, 1848. (As a subgroup in the "family" *Marchantiaceae* with diagnosis, at least in 1848.)

1877. *Hypenantreae* Trevisan, Mem. R. Ist. Lombardo, Cl. d, 13: 440. (As a "tribe" in the "order" *Marchantiaceae;* with diagnosis.)

[1881. *Operculatae* Leitgeb, Unters. über die Leberm. 4: 49. (As a subgroup of the subgroup *Marchantieae* in the ? family *Marchantiaceae;* with diagnosis.)]

1934. *Asterelleae* Jørgensen, Bergens Mus. Skrifter 16: 28. (Nomen nov. pro *Operculatae* Leitgeb; as "tribe" in the "family" *Marchantiaceae.*)

The following four names were each published as a "family" in the "order" *Marchantiales;* they were diagnosed.

1911. *Aytoniaceae* Cavers, New Phytol. 10: 42. (Nomen et stat. nov. pro *Operculatae* Leitgeb, cf. ibid. 9: 161, 1909. Note that this lectotypification has priority over that by Jørgensen, 1934, above.)

1923. *Rebouliaceae* Evans, North Am. Flora 14: 1: 39.

[1932. *Operculatae* Verdoorn, Manual of Bryol., p. 430.]

1940. *Grimaldiaceae* "Reichenbach 1848", Müller in Rabenhorst's Krypt.-Fl., Ed. 2, 6: Ergänzungsband: 220. (When making this totally wrong citation Müller seems to have had *Grimaldieae* Reichenbach as used by Rabenhorst in mind.)

Name bringing genera: 1) *Reboulia* Raddi corr. Nees, nomen conserv. 2) *Mannia* Opiz, 1829, syn. *Grimaldia* Raddi, 1818, non *Grimaldia* Schrank, 1805 (*Caesalpiniaceae*). 3) *Plagiochasma* Lehmann & Lindenberg, 1832, nomen conserv., syn. *Aytonia* Forster, 1776, non *Aitonia* Thunberg, 1776 (= *Nymania* Lindberg, *Meliaceae*), both names in honour of W. Aiton. 4) *Asterella* Pal. de Beauv., 1805, syn. *Hypenantron* Corda, 1829.

All the above groups, *Hypenantreae* excepted, have an essentially identical circumscription, although the continued inclusion of *Plagiochasma* is, to say the least, to me highly questionable.

The name to be accepted at the level of family is at first sight *Aytoniaceae* (to be corrected to *Aitoniaceae*), which would be the name of a family of liverworts called after a generic name which certainly has been applied more commonly to a genus of flowering plants, and which indeed has been officially rejected in the liverworts (for summaries see Kew Bull. 1935, p. 349; Le Jolis, 1894). The family name, amusingly, is threatened under the homonym rule. A tribe *Aitonieae* was erected for the flowering plant (Harvey, Gen. South-Afr. pl., p. 47, 1838, not seen; Flora capensis 1: 243, 1859-60; Roemer, Fam. nat. 1: 88, 1846). If the rank of this tribe were changed to family after 1911, the date of publication of *Aytoniaceae* Cavers, the name of the flowering plant family would have to be rejected under Articles 61, 64: 2. But Trevisan (1877, p. 437) already reported the existence of a flowering plant family name *Aitoniaceae*, which however I have been unable to trace, and which would have priority over *Aytoniaceae* Cavers! Only if this were so would the name *Rebouliaceae*, most commonly used nowadays, be correct.

The examples cited are not rare freaks, they are representative of a multitude of similar cases. The Preamble of our Code calls for precision, simplicity, stability, and avoidance of sources of error. We might add that it is our duty to see that our successors are spared the need for acquainting themselves with unnecessary synonymies. To attain these ends I should like to put the following emendations of our legislation forward for consideration by the IX. International Botanical Congress.

59. *Article 18:* Delete first sentence and substitute:

"The name of a family is a plural adjective used as a substantive; it is formed by adding the suffix-*aceae* to the stem of the correct name of its type genus. Exceptions to this rule, besides those listed in Note 2 below, may be maintained only by conservation."

Add new Note:

"If the name of a family when first proposed was derived from a synonym of the correct name of its type genus it shall be corrected without change of priority. The name of the correcting author shall be appended to that of the original author."

60. *New Recommendation 18A:* "If a family name currently in wide and general use proves to be derived from a synonym of the correct name of its type genus, this shall be a weighty reason for conserving the name-bringing synonym over the

otherwise correct name of the type genus, except when such a synonym is a later homonym of the legitimate name of a genus not included in the particular family."

One of the purposes of this Recommendation is to take care of difficulties resulting from the union of genera. In this sense it is safeguarded by Article 14, Note 4.

61. *Article 19:* In the first sentence delete: "... to the stem of the name of its type genus or of a synonym of this name." and substitute: "... to the stem of the correct name of its type genus."

Add new paragraph:

"The subfamily or tribe including the type genus of the next higher category also has this genus as its type."

Add new Note:

"Corrections for synonyms of the type genus are made as in the case of families."

The name of an order is ultimately derived from the name of a type genus. It is logical and in keeping with our legislation at the levels below genus (Articles 22, 26) that any subdivision of an order which includes the type of that order shall have its name derived from the one of that type, and in general that any taxon above the rank of genus and below the rank of order which includes the type of the next higher taxon shall have its name derived from the one of that type. In a complicated and half-hearted way our Code usually, but not necessarily always, makes us do this now. Yet the nomenclatural problems are very different at the higher levels, not only in theory but also in practice. For subgenera, sections, etc., subject to automatic naming because of containing the type of the next higher category, the ultimate fixed point lies usually *above* (except in those instances where a genus was erected by raising a taxon of lower rank, but even here priority rests entirely at the single level of genus): nomenclature works downwards from a single fixed point. The same holds true for subdivisions of species. It is not so for categories between genus and order. Nomenclature works upwards, then downwards, and indeed as things stand, because of Articles 17 and 61, it may change directions more than once. Article 17 provides that the name of an order is taken from that of its type family, and that suborders are designated in a similar manner. It is good so in principle, but should be brought in line with the preceding proposals.

62. *Article 17:* Repeal and substitute:

"The name of an order is taken from the correct name of its type family and has the ending *-ales*.

A suborder is designated in a similar manner, with the ending *-ineae*.

The suborder which includes the type family of its order also has this family as its type.

If the name of an order or suborder when first proposed was derived from a synonym of the correct name of its type family it shall be corrected without change of priority. The name of the correcting author shall be appended to that of the original author."

The real practical problems which we face lie in determining the correct names of families. Article 61 at first sight is somewhat confusing, because in it the last clause of Article 60 (redundant, but useful as a warning) is not repeated, suggesting that here priority exists outside the original rank. However, Article 61 is subject to Article 64: 1 and this contention is in part incorrect. *Provided that one proceeds by successive changes of rank*, and provided that no prior and different names lie in the way, it allows essentially for a unified nomenclature between order and genus for taxa including the same type genus, based on a single fixed priorable point above the rank of genus. It then obviates the bothersome frequent question: To what current

rank should a particular old name be assigned? Our current precise terminology has only relatively recently gained general acceptance. Thus what was what when Link (1829), unacquainted with our current Code, included inter alia a "sectio" *Alliaceae* parallel with a "subordo" *Dracaenaceae* in his "ordo" *Liliaceae*? But the operative phrase in Article 61 is "changed in rank". Most of our predecessors simply did not bother to cite previous authors of higher categories. Thus they described anew instead of "changing rank", even when they might have been aware of a prior corresponding taxon of different rank. I must admit that even after considerable thought I still do not fully comprehend the implications of Article 61. I believe that as it stands it is neither compulsory, if one avoids "change", nor, because of Article 64: 1, retro-active. Retained and clarified in this sense and in conjunction with my proposals above I would say that unassailable priority exists at the rank of family as to type genus (notwithstanding the existence of older "changeable" names of similar circumscription but different type), but subject to correction for name and automatic naming of "type" subfamilies, etc. But some of the practical difficulties would remain. The following proposal kills many a bird with one stone. The tortuous wording is designed for the clear rejection of names within the relevant range of rank based on other than names of genera. Thus a name such as *Operculatae* Leitgeb, a subgroup of the *Marchantiales*, is to be disregarded, whether it was typified or not. In conjunction with my other proposals I believe that it would result in considerable clarification and simplification at the practical level. If adopted it may require some editorial rearrangement: it does not quite fit any current spot in the Code.

63. *Article 61:* Repeal and substitute at another place in the Code:

"The type genus of a family is that genus included in it which first supplied the stem of its name or of a synonym of its name to the name of a validly published taxon of rank higher than a genus and not higher than an order, even if the resultant name was nomenclaturally superfluous in its original circumscription.

The type genera of subfamilies and tribes are designated in a similar manner."

With Article 61 removed, the choice of the type family of an order rests a matter of simple priority.

The rare case may arise where the system is thrown into confusion by the existence of an earlier homonym of higher category based on a later homonym of the type genus of the latter, but in a different group. In my proposals I have essentially defended the position that two wrongs do not make a right: that a name based on an illegitimate name shall not be legitimate: The element of confusion being negligible (should a touchy case ever occur conservation of a family name can take care of it), I offer the following proposal:

64. *Article 64: 2:* Delete first sentence and substitute:

"Except in the cases of taxa of rank higher than a genus but not higher than an order, if it is a later homonym, that is if it duplicates a name previously and validly published for a taxon of the same rank based on a different type."

A generic name is useless if it lacks some kind of diagnosis and we rightly deny it validity. Perhaps we go too far when, by Article 38, we even deny it acceptance if the species included in it are listed, although this may provide a perfectly good circumscription. The name of a higher taxon derived from that of a genus is as such automatically typified. For practical purposes a diagnosis is generally redundant: usually one does not even bother to look at it. To demand it seems a pedantic nicety. The following proposal seems sensible to me, but is essentially independent of the preceding ones.

65. *Article 32:* Add: "A name of a taxon above the rank of genus but not higher than an order and formed by the addition of a suffix to the stem of the name of a

genus shall be considered validly published even if no diagnosis was supplied, provided that it was effectively published before 1 January 1908."

Acceptance of this proposal would require editorial change in Article 38.

The changes here put forward should on adoption provide a workable basis for a "house cleaning" at the ordinal and family levels, corresponding to the work now in progress at the generic level. Once lists of names are on hand covering the whole of the plant kingdom a future Congress might find it advantageous to incorporate these in the Code, to insure continuous stability proof against bibliographic discovery.

Summary

Changes in legislation concerning the determination of names of families and orders are proposed.

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NOMENCLATURE PROPOSALS FOR THE MONTREAL CONGRESS

IX. PROPOSALS BY H. P. FUCHS (Washington, D.C.)

66. *Article 1:* Any group of individuals joined together by their morphological, anatomical, or other similarity will, in this Code, be referred to as *taxon* (plural *taxa*).

67. *Article 2:* [Replace the word "*taxa*" by "*taxonomic groups*"].

68. *Article 3:* [Replace the word "*taxa*" by "*taxonomic groups*"].

69. *Article 4:* If a greater number of ranks of taxonomic groups is required, the terms for these are made either by adding the prefix sub (*sub*) to the terms denoting the ranks or by the introduction of supplementary terms. A taxon may be assigned to taxonomic groups of the following subordinate rank: .....

Comments (*Articles 1-4*): As can be seen by the discussions on the interpretation of the term taxon [cf. C. V. Morton 1957, Rhodora 59: 43-44; C. V. Morton 1957, Taxon 6(5): 155; H. J. Lam 1957, Taxon 6(8): 213-215; H. W. Rickett 1958, Taxon 7(2): 37-38], it is used in an ambiguous way in the Int. Code. It seems that under the term taxon within the Int. Code are simultaneously understood a general and more theoretical concept on the one hand, and a special use fixed to a single group on the other, as it appears from the original wording of Article 1, where the term taxon is taken in a general meaning, and Article 5, where the same term is used for a defined group of individuals. It seems to be desirable to differenciate between the terms taxonomic group in the general sense and taxon for the special use, fixed to any single group of individuals.

70. *Article 5:* [Insert after the second paragraph:] This does not apply to cases in which an author referred to a taxonomic group by a term used for a different rank today.

Comments: As has been pointed out recently (cf. H. P. Fuchs 1958, Taxon 7(2): 47; V. H. Heywood 1958, Taxon 7(4): 89-91), the term *forme* has been in use in France with the connotation of subspecies.

71. *Article 7:* (The appended notes are to be altered:)

Note 1: (remains unchanged).

Note 2: (new). A *descriptotype* is that constituent element which can be proved to have served an author as a basis for the description of a taxon, or which has been designated as the nomenclatural type.

Note 3: (new). An *interpretotype* is that constituent element not clearly proved to have served as a basis for a description, but designated by the author of a taxon by the name in question.

Note 4: (formerly note 2). A *holotype* ("type") is that single specimen or other element either used as a basis for the description by the author and/or designated by him as the nomenclatural type (*descriptotype*) or a specimen interpreted by the author as belonging to the taxon described by himself (*interpretotype*). If a holotype is extant, it has precedence over all other kinds of types.

Note 5: (new). A *merotype* is a fragment of the original *holotype,* which has been divided into two or more pieces after having been used as a basis for the description.

Note 6: (new). If more than one specimen of either the *descriptotype* or *interpretotype* exist, one specimen must be chosen as *lectotype.*

Note 7: (new). Once a specimen has been chosen as a lectotype, this choice must be taken as binding, unless it can be proved that this choise arises from a misinterpretation.

Note 8: (new). A *synonymotype* is that constituent element of a taxon quoted by the author as being identical with his newly described taxon.

A *synonymotype* can be used as a substitute for a *descriptotype* or an *interpretotype* if such types are missing. The choice of a *synonymotype,* once made, is permanent and cannot be later changed, even if a *descriptotype* or an *interpretotype* should be found.

Note 9: (formerly 4).

Note 10: (formerly 5).

Comments: In a short study on the interpretation of samples in the Herbarium of the Linnean Society of London, it has been sought to point out that in most cases the proof that a certain plant was used to compose a description is very difficult (cf. H. P Fuchs 1955, in Taxon 4(3): 62-67). On the other hand it seems equally important if it can be proved that an author interpreted a certain plant as belonging to a certain taxon described by himself. Nevertheless the difference between a herbarium sample used as a basis for a description and one only designated by the author as belonging to the taxon described by himself should be indicated by the terms *descriptotype* for the former, and *interpretotype* for the latter.

During revisions of single genera and species it can be noticed that, especially with rare species often known only from a few specimens, the original type-specimen was divided by later students, so that now there are different parts of the original type at different places. In this case, we can hardly speak of a *holotype* any longer, since, both in the original herbarium and in other collections, there exist only *parts of the holotype,* for which the term *merotype* is proposed.

This can be illustrated most strikingly by an example which Prof. G. Herter drew to the author's attention.

In the Herbarium Boissier at Geneva there is a fragment of the type of the species today called *Adesmia herteri* Looser 1936, Rev. sudamer. Bot. 3: 145 (= *Adesmia glutinosa* Arechavaleta 1901, Anal. Mus. Montevideo 3: 351 non Hooker & Arnott 1831, Bot. Beech. Voy. 19) for reasons of homonymy. The type (or rather the part still extant of the type) today conserved in the Museo de Historia nacional at Montevideo was probably collected by Ernst Gibert, according to the original label. On this Gibertian original Arechavaleta had based his description and it must therefore automatically become the type of the nomen novum *Adesmia herteri* Looser, which cannot be used for reasons of homonymy. Now, F. Felippone must have taken a piece of this Gibertian original and sent it for a revision to Beauverd with a label by his hand, on which appear only a number chosen at random (probably Felippone's number of revision) and the two names "*A. uruguaya*" and "- *glutinosa*". Gibert's original plant, conserved in the Museo de Historia nacional at Montevideo, and the fragment of this original, which is today in the Herbarium Boissier at Geneva, together constitute the type of the *Adesmia glutinosa* Arecha-

valeta non Hooker & Arnott, and therefore also of *Adesmia herteri* Looser. But both are but fragments of the real type, so that it is not possible to speak of a *holotype*, but the new term *merotype* should be applied to both fragments.

The original meaning of *Article 8*, which should be deleted (see below), is to adduce a holotype when it has been found, even if earlier, for the same taxon, a *lectotype* or *neotype* had been chosen. This procedure is very dangerous because, following it, a nomenclatural *pêle-mêle* is bound to happen. As *Article 26* requires repeating the specific name unaltered in the infraspecific ranks when designating the nomenclatural type, those infraspecific names would have to be used for different infraspecific taxa. It is hard to believe that, especially in the lowest infraspecific ranks, a *lectotype* or a *neotype* belongs to the same taxa as the *holotype*.

The term *neotype* should be excluded from the *Int. Code*. It seems to be illogical and contrary to the application of the name of a taxon in the sense of the original author, to choose as a type a plant which never had any connection with the author himself. Further, a more or less clearly circumscribed taxon can be typified by other types than a neotype. If no kind of type except a neotype is extant, the whole conception of such a taxon is extremely doubtful. The misuse of the term *neotype* can convey an erroneous impression, as is evidenced in the monograph on the genus *Pulsatilla* Miller 1768, Gard. dict., ed. 8, by Aichele & Schwegler 1957, in Fedde's Repertorium spec. nov. regni veget. 60(1-3): 1-230.

In many old botanical publications, especially in the works of Linnaeus, a large number of new species never had a type in the common meaning of today. As has recently been pointed out by W. T. Stearn 1957, in his preface to the facsimile reprint of Linnaeus' first edition of the "*Species Plantarum*", a lot of Linnaean species are, based only on earlier descriptions or illustrations, without Linnaeus ever having seen relevant herbarium samples. However, in many such cases, the types on which the pre-Linnaean descriptions or illustrations cited by Linnaeus as synonyms to his new species exist even today. J. E. Dandy apud W. T. Stearn 1957, Spec. plant., Facs. 1st. ed., London 1: 129, adnot. 1 suggested for these types the term *typotype*, whilst in the present remarks the term *synonymotype* is proposed.

72. *Article 8:* (Delete Article 8 and insert the recommendations 8A-8E as recommendations 7A-7E in the end of Article 7).

Comments: (see above para 3).

73. *Article 18:* Note 1. (add at the end of note 1:)

If one wishes to take into consideration the author who corrected the improper termination, one can add the connecting author joining him with the original author by the word corr. (= *corrigit*).

74. *Article 19:* Note: (change the wording in the following way:)

When a name of a taxon belonging to one of the above categories has been published with an improper termination, such as *-eae* for a subfamily or *-oideae* for a tribe, the ending must be changed to accord with the rule, without change of the author's name, unless one wishes to follow the suggestion of Art. 18, Note 1. However, when the rank of the group is changed by a later author, his name is then cited as author for the name with the appropriate ending, citing the former author between brackets in the usual way.

75. *Article 22:* (delete last part of the first sentence beginning with, but .. and insert the following sentence:) ....., with citation of the author of the genus between brackets.

Comments: (see below under *Article* 26).

76. *Article 26:* (delete last part of the first sentence beginning with, but .. and insert the following sentence:) ..... with citation of the author of the next higher taxon between brackets.

Comments: Already Fosberg 1953, Taxon 2(5): 108, Fosberg apud Lanjouw 1954, Rec. synopt.: 58, H. P. Fuchs 1954, Rev. sudamer. bot. 10(6): 184 proposed as amendmend for the *Int. Code 1952* to cite an author after the names of the infraspecific taxa indicating the nomenclatural type. After Fosberg's proposal had been rejected by 298 to 10 and 22 respectively by the preliminary mail-vote, the ratio at the Eighth Int. Bot. Congress, June 30, 1954 in Paris, after a thorough discussion, was 29 against 22 votes. (cf. Troupin 1955, Taxon 4(6): 148 and H. P. Fuchs 1955, Taxon 4(6): 148). It may be desirable to recapitulate the very striking example which was adduced in the discussion on this subject at the Eighth Int. Bot. Con-

gress in Paris, 1954, by MM. Leonard and Troupin (Brussels):

Exell 1944, Catal. vasc. plants S. Tomé: 278 noticed during his researches on African species of the genus *Pycnanthus* Warburg 1895, Ber. Deutsche Bot. Ges. 13: 94 that the type of *Myristica angolensis* (Welwitsch 1859, Annal. Conselho Ultram. 1858: 554, nomen solum et Welwitsch 1862, Syn. expl. Mad. Drog. Med.: 51, descriptio sine nomine, ex) Ficalho 1884, Plantas uteis Afr. portug.: 246, n. LX belongs taxonomically to the taxon described by Baillon as *Myristica Kombo* Baillon 1868, Adansonia 9: 79. Exell takes as the oldest name and basionym for a new combination within the genus *Pycnanthus* Warburg the binominal *Myristica angolensis* Welwitsch, forming at the same time the new combination *Pycnanthus angolensis* [1]) (Welwitsch, sub *Myristica*) Exell 1944, Catal. vasc. plants S. Tomé: 278. So the variety designating the type should be called *Pycnanthus angolensis* (Welwitsch, sub *Myristica*) Exell, var. *angolensis* (without author citation). Up to this point, the facts are quite easy and without any trouble. The matter gets complicated because Warburg, who put the binominal of Baillon in the genus *Pycnanthus* Warburg, forming the new combination *Pycnanthus Kombo* (Baillon, sub *Myristica*) Warburg 1897, Nova Acta Nat. Cur. 68: 252, described a var. *angolensis* Warburg 1857, Nova Acta Nat. Cur. 68: 257, which forms another delimitation than the typical variety of *Pycnanthus angolensis* (Welwitsch, nomen solum ex) Ficalho and is therefore typified by another herbarium plant. As has been pointed out in the foregoing, *Pycnanthus angolensis* (Welwitsch, nomen solum ex Ficalho, sub *Myristica*) Exell and *Pycnanthus Kombo* (Baillon, sub *Myristica*) Warburg designate the same taxon, and therefore there exist two varieties of the same species which have one and the same name: var. *angolensis* (without author citation; = type in the varietal rank) and var. *angolensis* (Warburg, sub *Pycnantho Kombo*) Gilbert & Troupin 1951, Fl. Congo Belge 2: 392. If the typical variety is designated according to the *Int. Code 1956*, Article 26, the specific name without citing an author, it should be indicated that the variety designating the type is not the same as the var. *angolensis* (Warburg, sub *Pycnantho Kombo*) Gilbert & Troupin: *Pycnanthus angolensis* (Welwitsch, sub *Myristica*) Exell, var. *angolensis* non (Warburg, sub *Pycnantho Kombo*) Gilbert & Troupin. In this case the author citation would be much simpler and clearer, if for the type in the infraspecific ranks the author of the higher taxon should be cited between brackets: var. *angolensis* ((Welwitsch, nomen solum, ex) Ficalho, pro specie).

77. *Article 46:* (delete last part of last sentence).

Comments: (see above under Article 26).

78. *Recommendation 46A:* When a name has been proposed but not validly published by one author and is subsequently validly published and ascribed to him by another author, the name of the former author and the connecting word *ex* are added between square brackets, followed by the name of the publishing author ..... If it is desirable or necessary to abbreviate such a citation, the words between square brackets are left out.

Comments: This is a bibliographic aid. It would emphasize the publishing author. It would help persons who wish to cite only

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[1]) It seems to be not quite out of discussion, if the use of the binominal *Myristica angolensis* (Welwitsch 1859, Annal. Conselho Ultram. 1858: 554, nomen solum et Welwitsch 1862, Syn. expl. Mad. Drog. Med.: 51, descriptio sine nomine ex) Ficalho 1884, Plantas uteis Afr. portug.: 246, n. LX as basionym for a new combination is in accordance with the Int. Code. As it has already been pointed out by Warburg 1897, in Nova Acta. Nat. Cur. 68: 252, in syn. ad *Pycnanthum Kombo*, the first quotation of *Myristica angolensis* by Welwitsch 1859, in Annal. Conselho Ultram. 1858: 554 is only as a nomen nudum. Welwitsch 1862, Syn. expl. Mad. Drog. Med.: 51 gives a description of a certain species of *Myristica*, but without indicating that this unnamed newly described species of *Myristica* from 1862 would be the same taxon published by Welwitsch in 1859 as a nomen nudum. As the effective and valid publication of the binominal *Myristica angolensis* Welwitsch was published only by Ficalho 1884, Plantas uteis Afr. portug.: 246, n. LX, the binominal *Myristica Kombo* Baillon 1868, Adansonia 9: 79 acquires priority so that the species under discussion should be quoted as *Pycnanthus Kombo* (Baillon, sub *Myristica*) Warburg 1897, Nova Acta Nat. Cur. 68: 258.

one author's name (in floras or manuals) to use the correct author's citation.

For example, many names proposed in manuscript by Andrzejovskj were validly published only by Besser, Marschall von Bieberstein and others. Frequently Andrzejovskj is cited as the only author of the taxon, in abbreviated citations. A citation of the author who proposed only a name, without validly publishing it, between brackets would save anyone from such a mistake.

79. *Recommendation 46B:* When a name with a description (or reference to a description) supplied by one author is published in a work by another author, then the word *apud* should be used to connect the name of the two authors unless the name of the publishing author forms an integral part of the title of the publication; in this case the two authors should be united by the word *in*.

Comments: This is a return to the respective provision in the *Int. Rules of 1935*. (cf. Int. Rules 1935, Art. 48, para 3). The use of the words *apud* and *in* instead of just *in* seems to be linguistically more accurate.

80. *Recommendation 46C* (new): It is desirable to indicate after the name of the author of a taxon the year in which the taxon was validly published. If one wishes to extend the citation of the author, one may add, after the year of publication, the respective title and separated by colon, the number of the page on which the taxon is described.

Comments: The text of Article 46 provides for the citation of the author's name "in order that the date may be readily verified", however the addition of the date itself takes but little more space and is the shortest way of making the publication date readily available.

81. *Recommendation 47A:* (insert after *emendavit* the following words:) ....., *amplificavit* (*amplif.*), *restrinxit* (restr.),....

Comments: In many cases it may be desirable to indicate in which way an emendation has been made. In order to provide the differenciation between such cases where the original limits of a taxon were extended and others where the original limits of a taxon has been restricted, the use of the two terms proposed above may be desirable.

82. *Recommendation 49A* (new): It is desirable to indicate within a citation between parentheses the former status of the taxon.

Examples: *Isoetes tenella* (Leman 1822, Dict. sc. nat. 24: 24, pro var. *I. lacustris*) Desvaux 1827, Mém. Soc. Linn., Paris 6: (127).

Pulsatilla pratensis (L. 1753, Spec. plant., ed. 1, 1: 539, sub *Anemome*) Miller 1768, Gard. dict., ed. 8: n. 2.

Cuspidaria [Andrzejovskj mss. ex] A. P. Decandolle 1821, Regni veget. syst. nat. 2: 493, pro sect. *Erysimi*) Besser 1822, Enum. plant. Volhyn.: 104 non A. P. Decandolle 1838, in Bibl. Univ. Genève 17: 125, nom. cons.

83. *Recommendation 50A:* In order to avoid confusion, author's names put after names of plants should not be abbreviated. Exception is made only for Linnaeus who is abbreviated as L.

If there exist more than one author with the same surname, the initials of their Christian names should be added.

Examples: J. Fr. Gmelin (= Johann Friedrich Gmelin); J. G. Gmelin (= Johann Georg Gmelin); C. Chr. Gmelin (= Carl Christian Gmelin); S. G. Gmelin (= Samuel Gottlieb Gmelin).

Comments: (cf. e.g. V. J. Grumann 1958, Taxon 7(2): 55, n. 7).

84. *Recommendation 50C:* (add at the end of the recommendation:) ..... or *nomen solum* (*nom. sol.*).

Note: It seems to be questionable whether an abbreviation as *nom. nud.* is of great value. The period after the abbreviation uses just the same space as does the letter *e* or *u*. May be it would be more logical to abbreviate *nomen nudum* as *n.n.* and *nomen solum* as *n.s.* which would be a real abbreviation. The same could be said for the abbreviation *nom. cons.* and many other examples in the *Int. Code*.

85. *Recommendation 50D:* (change the word or in and, and read the last sentence as follows:) ..... This method is especially applicable when reference is made to authors earlier than those listed in Article 13.

Comments: (see Recommendation 46A).

86. *Recommendation 50H:* (insert after last sentence:) ..... should be added between quotation marks.

87. *Article 71:* Infraspecific epithets such as *typicus, originalis, originarius, genuinus,*

verus, and *veridicus* are illegitimate except where they repeat the specific epithet because Art. 26 requires their use.

Comments: A lot of the infrageneric names listed in Art. 71 were used long before than the type-method came into general use. They were intended not to indicate the nomenclatural type but mostly to designate the biological or phytogeographical type of a certain region. Therefore especially the names *typica* and *genuina* are confusing, being in use for different taxa in different regions.

88. *Article 73:* (add to notes 2 and 3 the following sentence:)

Note 2: ..... a matter of typography. One may if one wishes so, add the original spelling after the author's quotation between quotation marks.

Note 3: ..... as an orthographic error. One may if one wishes so, add the original spelling after the author's quotation between quotation marks.

X. ARTICLES 49 AND 50 *versus* ARTICLES 46 AND 60

A. A. Bullock (Kew)

The International Code gives detailed instructions concerning the citation of authors' names and in Articles 49 and 50 particular reference is made to the procedure to be adopted when the rank or position of a taxon is changed on taxonomic grounds.

The reason for such citation is given in Article 46, — "For the indication of the name of a taxon to be accurate and complete, and in order that the date may be readily verified, ...". A further recommendation (46A) suggests that an author who originated but did not validly publish a name may be included in the citation in the form *Havetia flexilis* Spruce ex Planchon et Triana. Care is taken to point out that the omission of "Spruce ex" is not to be regarded as an error, and no reason for its inclusion is given. The only possible reason seems to be that it may be used to indicate the type of the name. This it may do, but it is frequently found that the publishing author did not in fact see the material studied by the originator of the name and the type must be sought elsewhere [1]). From this point of view each citation must be dealt with on its own merits; certainly Recommendation 46A might well be changed to give more precision to such "ex" citations, or suggest that they be abandoned altogether. An important value of author citations, not mentioned in the code, is the avoidance of confusion between homonyms.

Article 60 is unequivocal; "in no case does a name or an epithet have priority outside its own rank." It is implicit that when a variety or other infraspecific taxon is raised to specific rank and the author makes use of the same epithet, then the epithet in its new position must be treated as a new one. Thus *Fumaria bulbosa* var. *solida* Linnaeus (1753), was regarded as a distinct species by Miller in 1771, and he published the combination *Fumaria solida* for it. Under Article 49 the correct citation for this name is *Fumaria solida* (Linnaeus) Miller which by Article 46 indicates that the specific epithet "*solida*" dates from Linnaeus (1753). It is thus clear that Articles 60 and 49 are in conflict, and that the precision aimed at in Article 46 is lacking.

The conflict is carried a stage further when *Fumaria solida* is transferred to *Corydalis*, for then under Article 49 the citation must be *Corydalis solida* (Linnaeus) Swartz, whereas under Articles 60 and 46 it should be *Corydalis solida* (Miller) Swartz. The latter form clearly indicates that the specific epithet dates from Miller, the former, liable to be confused with the transfer of a species from one genus to another, indicates only the possibility that the type of the name may be determined from a work by Linnaeus. The parenthetic "Linnaeus" in such citations is almost exactly equivalent to the "Spruce ex" of Recommendation 46A.

The same arguments apply in the reverse direction and in the circumstances envisaged in Article 50 concerning the operations hybrid to species and species to hybrid. There can be no doubt that Article 60 must be rigorously applied in these cases, and at all levels in the hierarchy of taxa.

That "Spruce ex" of one example and "(Linnaeus)" in the other do give information cannot be denied and their inclusion in the citation is of value. It is suggested, therefore, that Rec. 46A, [*Proposal* 89] and Art. 49 [*Proposal* 90] and 50 [*Proposal* 91] be amend-

[1]) See, for example, *Pentatropis* Wight et Arn.; Bullock in Kew Bull. 1955: 283. 1955.

ed so that the citations in the chosen examples may be written *Havetia flexilis* Spruce ex Planchon et Triana, *Fumaria solida* [Linnaeus] Miller and *Corydalis solida* ([Linnaeus] Miller) Swartz, whilst the permissive use of square brackets suggested in Recommendation 50D (to indicate pre-starting point authorship) may be discontinued [*Proposal* 92].

It is of some importance to emphasize that "Spruce ex" in the example above should be used only as a deliberate indication of a type chosen by the publishing author and its use merely to indicate the originator of the name should be forbidden. The "[Linnaeus]" of the second example will always indicate the type chosen by the bracketed author.

Similar considerations also apply to author citations following names of taxa of suprageneric rank.

XI. A PROPOSAL ON FAMILY NAMES

H. W. Rickett (New York)

In Article 19 of the ICBN there is a note to the effect that if the name of a subfamily, tribe, or subtribe is published with an ending other than that prescribed by the *Code*, the ending must be changed to accord with the rule, without a change of the author's name. This provision was accepted at the Stockholm congress and appears in both the 1952 and 1956 editions of the *Code*.

A similar provision for names of families forms Art. 18 Note 1 of the 1956 *Code*. This, however, was not accepted (or rejected) by a congress, never having been proposed; it was inserted by the Editorial Committee as a logical extension of the principle of the Art. 19 Note. In this action the committee may be considered to have exceeded its authority; their idea, however, may have merit.

In 1815 Richard described a family which he named the Butomeae. Is it profitable to reject this as illegitimate and search for the first writer who used the correct ending? There are numerous examples of the same problem: Chenopodae Ventenat, Passifloreae de Candolle, Lythrarieae de Candolle, Caryophylleae de Jussieu, Celastrinae R. Brown, etc.

Indeed to apply the priority principle to names of families involves endless bibliographic search (which I have not undertaken to ascertain if the above examples are the prior names of their families). The conservation of family names has long been advocated and will be brought to the attention of the ensuing congress. If all or most family names are conserved, there is still less point to discovering who first used the correct ending for each. But it may still be worth while to cite as authority for the name the author who first gave a clear description of the family, no matter what ending he used.

93. *Article 18:* I propose, therefore, that Note 1 of Art. 18 be submitted to the consideration of the congress in the usual way.

This should not be interpreted as legitimizing such names as the Passiflorées of de Jussieu or the Gessnériées of Nees von Esenbeck. These are not Latin words, nor can they be treated as such, and to use them is contrary to Principle V of the *Code*.

XII. VARIOUS PROPOSALS ON PALEOBOTANICAL NOMENCLATURE

94. *Article 34:* Modify first sentence of Article 34 to read: "In order to be validly published, a name of a new taxon of plants, the bacteria, algae and all fossils excepted, published on or after 1 January 1935, must be accompanied by a Latin diagnosis or by a reference to a previously and effectively published Latin diagnosis."

Comments: Recently expressed but unwarranted confusion regarding exemption of fossil plant names from mandatory Latin diagnoses seems to necessitate clarification and more effective wording of this provision. According to the present wording of Article 34 (. . . a new taxon of *recent* plants . . .) *only* recent plants must be diagnosed in Latin. A survey of all paleobotanical literature effectively demonstrates that the vast majority of paleobotanists have never regarded it necessary or even advantageous to diagnose fossil plants in Latin.

The proposed rewording would eradicate any possible doubt that fossil plants are exempt from mandatory Latin diagnoses.

Proposed by: S. H. Mamay (Washington, D.C.).

95. *Article 34:* Insert "recent" before "algae" in first line of last sentence, Article 34.

Comments: The present wording of this provision implies that Latin diagnoses are required for fossil algae; this is clearly in contradiction of the already established exemption of fossil plants from mandatory Latin diagnoses, as provided in the first sentence of Article 34.

Proposed by: S. H. Mamay (Washington, D.C.).

96. *Article 36:* Insert "recent" before "algae" in second paragraph, Article 36.

Comments: The present wording of this provision implies that Latin diagnoses are required for fossil algae; this is clearly in contradiction of the already established exemption of fossil plants from mandatory Latin diagnoses, as provided in the first sentence of Article 34.

Proposed by: S. H. Mamay (Washington, D.C.).

97. *Article 34:* Article 34 at present reads:

In order to be validly published, a name of a new taxon of recent plants, the bacteria and algae excepted, published on or after 1 Jan. 1935 must be accompanied by a Latin diagnosis or by a reference to a previously and effectively published Latin diagnosis.

In order to be validly published, a name of a new taxon of algae published on or after 1 Jan. 1958 must be accompanied by a Latin diagnosis or by a reference to a previously and effectively published Latin diagnosis.

The purpose of the amendment would be to extend the requirement of a Latin diagnosis to fossil plant names published on or after 1 Jan. 1960. It would change the wording of the first paragraph in the above article to read as follows:

In order to be validly published, a name of a new taxon of plants, the bacteria, algae, and fossil plants excepted, published on or after 1 Jan. 1935 must be accompanied by a Latin diagnosis or by a reference to a previously and effectively published Latin diagnosis.

And would add as a final paragraph to the article:

In order to be validly published, a name of a new taxon of fossil plants published on or after 1 Jan. 1960 must be accompanied by a Latin diagnosis or by a reference to a previously and effectively published Latin diagnosis.

Comments: The volume of paleobotanical literature appearing in a variety of modern vernacular languages other than English, German, French, Spanish, or Russian is increasing rapidly. Since Latin remains the most nearly universal scientific language, Latin diagnoses for new taxa would greatly increase the value and usability of systematic works in all languages. This requirement would also bring the treatment of fossil and recent taxa into greater harmony.

Proposed by: Aureal T. Cross, William R. Evitt, John W. Funkhouser, William S. Hoffmeister, Estella B. Leopold, Mart T. Schemel, and L. R. Wilson.

98. *Article 36:* Article 36 at present reads:

In order to be validly published, a name of a new taxon of fossil plants published on or after 1 Jan. 1912 must be accompanied by an illustration or figure showing the essential characters, in addition to the description, or by a reference to a previously and effectively published illustration or figure.

In order to be validly published, a name of a new taxon of algae of specific or lower rank published on or after 1 Jan. 1958 must be accompanied by an illustration or figure showing the distinctive morphological features, in addition to the Latin diagnosis, or by a reference to a previously and effectively published illustration or figure.

It is proposed to add the following paragraph:

In order to be validly published, a name of a new taxon of fossil spores or pollen published on or after 1 Jan. 1960 must be accompanied both by drawings to illustrate diagnostic features of the new taxon and by photomicrographs.

Comments: In many cases a combination of drawings and photomicrographs would adequately illustrate the diagnostic features of new taxa of fossil spores and pollen where this cannot be done satisfactorily by drawings or photomicrographs alone. This results from the principal shortcomings of each type of illustration, viz.:

1. A drawing is subjective; it portrays only selected features and may present erroneous interpretations.

2. A photomicrograph is severely limited by microscope optics (e.g., limited depth of

focus, limited resolving power), and it may over-emphasize unimportant or misleading features of a specimen (e.g., shadows, color or density variations, adventitious particles, etc.).

Proposed by: Aureal T. Cross, William S. Hoffmeister, Estella B. Leopold, Mart T. Schemel, and L. R. Wilson.

99. *Article PB. 3:* Article PB. 3 at present reads:

From 1 Jan. 1953 the name of a genus or of a taxon of higher rank is not validly published unless it is accompanied by a description of the taxon or by reference to a previously and effectively published description of it.

The amendment would add the following sentence to this article:

From 1 Jan. 1960 this description of the new taxon must indicate its difference from other taxa of equal rank that are morphologically similar to it.

Comments: This amendment would equate the requirements for valid publication of monotypic and non-monotypic genera. Article PB. 3 presently requires for the valid publication of genera and higher taxa of fossil plants a description or a reference to a previously and effectively published description. However, Article PB. 6 places the additional requirement, which now applies only to monotypic genera: "... a description of the genus indicating its difference from other genera."

The indication of difference from other taxa that are morphologically similar would also:

1. Give added emphasis to those characters that the author considers most useful in distinguishing the new taxon.
2. Answer the question: Is the new taxon really separable from previously described taxa of equal rank?
3. Help to guard against circumscriptions that overlap those of other taxa of equal rank.

Proposed by: Aureal T. Cross, William R. Evitt, John W. Funkhouser, William S. Hoffmeister, Estella B. Leopold, Mart T. Schemel, and L. R. Wilson.

100. *New Article for Appendix II:*

From 1 Jan. 1960, for the name of a genus of fossil plants to be validly published, the description of the genus must be expressed in morphological terms and must not depend on mere citation of affinity or similarity to other taxa.

Comments: 1. The morphological features of a fossil specimen are its objectively determinable characteristics. These features are inherent in the fossil, they can be examined and re-examined, and they can be described and illustrated.

2. If a taxon is described merely by citation of affinity or similarity to another taxon, all later workers must have the same knowledge and outlook as the original author in order to comprehend the new taxon as he did.

Proposed by: Aureal T. Cross, William R. Evitt, John W. Funkhouser, William S. Hoffmeister, Estella B. Leopold, Mart T. Schemel, Alfred Traverse, and L. R. Wilson.

101. *Article 10:* Paragraph three: revision of wording:

For recent plants of which it is impossible to preserve a type specimen, or for a species of this kind without a type specimen, the type may be a description or figure.

Comments: Some paleobotanical workers have misunderstood the intent of the original note, and have destroyed their material so that the description or figure may stand as the type. This was not the original intent of this note in Article 10.

Proposed by: Frank L. Staplin (Calgary, Canada).

102. *Article 36:* Article 36 presently reads:

In order to be validly published, a name of a new taxon of fossil plants published on or after 1 Jan. 1912 must be accompanied by an illustration or figure showing the essential characters, in addition to the description, or by reference to a previously and effectively published illustration or figure.

In order to be validly published, a name of a new taxon of algae of specific or lower rank published on or after 1 Jan. 1958 must be accompanied by an illustration or figure showing distinctive morphological features in addition to the Latin diagnosis, or by a reference to a previously and effectively published illustration or figure.

The purpose of the amendment is to eliminate the existing conflict between Article 36 and Article PB. 3 and give legitimacy to those validly published taxa above the rank of the genus. It is proposed to delete paragraph one from the Article.

The Article would read as follows:

In order to be validly published, a name of a new taxon of algae of specific or lower rank published on or after 1 Jan. 1958 must be accompanied by an illustration or figure showing the distinctive morphological features, in addition to the Latin diagnosis, or by reference to a previously and effectively published illustration or figure.

Comments: 1. Deletion of paragraph one of Article 36 removes an undeniable conflict in establishing a date, 1 Jan. 1912 (Article 36) or 1 Jan. 1953, (Article PB. 3) for effecting the similar requirements imposed by these articles. These requirements may be imposed by amendments to Article PB. 3 which is the proper location for an article pertaining to paleobotany.

2. The strict enforcement of this paragraph which requires that *all* taxa of fossil plants, published after 1 Jan. 1912 must be accompanied by an illustration would invalidate many generally accepted names above generic rank merely because they are not accompanied by a figure.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

103. *Article 58:* Article 58 presently reads:

When a taxon of recent plants, algae excepted, and a taxon of the same rank of fossil or subfossil plants are united, the correct name or epithet of the former taxon must be accepted, even if it is antedated by that of the latter.

Example: If *Sequoia* Endl. (1847), a genus of recent plants, and *Steinhauera* Presl (1838), a genus of fossil plants, are united, the name *Sequoia* must be accepted for the combined genus, although it is antedated by *Steinhauera.*

The purpose of this amendment is to eliminate from the Code a misleading and debatable example, *Steinhauera.*

Comments: 1. *Steinhauera* is an organ-genus established for fossil strobili and therefore cannot be considered as equivalent in circumscription to the genus *Sequoia.* The original generic description, specific description, and illustration pertains only to fossil strobili, a single organ as do most fossil genera.

2. The systematic position of these fossil strobili has been frequently questioned by Menzel, 1900, Nathorst, 1910, Schopf, 1936, and others. Some have even questioned the coniferous relationship of the *Steinhauera* strobili. It would thus be unfortunate to perpetuate this name as an example under Article 58.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

104. *Article PB. 1:* Article PB. 1 presently reads:

Since the names of the species, and consequently of many of the higher taxa of fossil plants are usually based on specimens of detached organs and since the connection between these organs can only rarely be proved, organ-genera (organo-genera) and form-genera (forma-genera) are distinguished as taxa within which species may be recognized.

An organ-genus is a genus whose diagnostic characters are derived from single organs of the same morphological category or from restricted groups of organs connected together.

A form-genus is one that is maintained for classifying fossil specimens that lack diagnostic characteristics indicative of natural affinity but which for practical reasons need to be provided with binary names. Form-genera are artificial in varying degree.

Note 1. Organ-genera based on detached parts may be distinguished not only by morphological characters, but also by reason of different modes of preservation.

Note 2. It is necessary to distinguish both organ-genera and form-genera since the former are held to indicate a certain degree of natural affinity, while the latter may — and in many instances do — include species belonging to different families or even groups of higher rank, e.g. ferns and pteridosperms. But form-genera have been recognized as pertaining to a special morphological category since 1828 (Adolphe Brongniart). Since that time they have been constantly used in taxonomic and morphological literature and they are quite indispensable.

The purpose of this amendment is to insure formal recognition of organ-species and to exclude from consideration for purposes of priority names of form-genera which have been employed in strictly morphological sense. It would change the wording of paragraph one and add an additional paragraph as Note 3.

Paragraph one would read as follows:

Since the names of taxa of fossil plants are usually based on specimens of detached organs and the connection between these

organs can only rarely be proved, organ-genera (organo-genera) and form-genera (forma-genera) are distinguished as taxa within which organ-species are recognized.

Note 3 would read as follows:

The term form-genus has been employed both in a morphological and in a nomenclatorial sense. Only the names of form-genera for which types are designated have priority.

Example: *Triletes* was used by Reinsch in 1881 to designate trilete microfossils. No genotype was given nor a species mentioned. Later authors such as Zerndt combined specific epithets with *Triletes,* (e.g. *T. glabratus* Zerndt, 1930), without designating a genotype, the genus still being used in a morphological sense. In 1936 Schopf designated a genotype for *Triletes* (*T. reinschi* Ibrahim, 1932). With the designation of this type the protection of the priority of the form-genus *Triletes* was begun in 1936.

Comments: 1. Although the use of organ-species has been extensively employed in paleobotanical nomenclature there is no direct reference to their existence.

2. Since the term form-genus has been employed with two distinct meanings, nomenclatorial and morphological, it is imperative that the requirements for priority be explicitly defined. Only this or a change of the term for "form-genera used in a morphological sense" can prevent an expansion of a doubtful group of binomials which should receive no protection under the Code.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

105. *Article PB. 3:* Article PB. 3 presently reads:

From 1 Jan. 1953 the name of a genus or of a taxon of higher rank is not validly published unless it is accompanied by a description of the taxon or by reference to a previously and effectively published description of it (see Art. 39).

The proposed amendment is introduced to eliminate conflicts between the present Article and Article 36 and to consolidate regulations pertaining to paleobotany in Appendix II. Obviously this amendment has not been precisely worded as new proposals may be added for other requirements before this amendment is in its final form. The valid sections of Article 36 and Article PB. 3 have been taken verbatum from the Code and thus there is some repetition in wording in the proposed amendment. The proposed amendment would read:

In order to be validly published a name of a new taxon of fossil plants above the rank of genus published on or after 1 Jan. 1912 must be accompanied by a description or by a reference to a previous and effectively published description of it.

From 1 Jan. 1953 the name of a genus is not validly published unless it is accompanied by a description of the taxon or by a reference to a previously and effectively published description of it.

In order to be validly published a name of a new species or organ-species of fossil plants must be accompanied by a description and an illustration. From 1 Jan. 1960 a new species must be additionally accompanied by a differential diagnosis and a definite designation of the type.

Comments: 1. The parts of Article 36 which deal with fossil plants are incorporated as this seems the proper location for an article pertaining to paleobotany.

2. The strict enforcement of the first part of Article 36 which requires that all taxa of fossil plants published after 1 Jan. 1912 must be accompanied by an illustration would invalidate many generally accepted names above generic rank merely because they are not accompanied by a figure.

3. The existing conflict of dates (1 Jan. 1912 versus 1 Jan. 1953) for effecting the similar requirements at and above the generic level between Article PB. 3 and Article 36 is eliminated.

4. Generic and specific circumscriptions are more sharply delineated by requiring a differential diagnosis. The designation of types will offer an objective basis upon which a synonymy can be established.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

106. *Recommendation PB. 6A:* The present Recommendation reads:

An author describing organ-genera should clearly indicate for which kind of organ the genus is established.

It is desirable that the name should indicate the morphological category of the organ. (For leaves a combination with phyllum, for fructifications with carpus or theca, etc.).

The purpose of the amendment is to add another paragraph to the Recommendation which would indicate clearly combinations between organ-species and extant genera.

Paragraph three would read:

An author establishing an organ-species within an extant genus or transferring an organ-species to an extant genus should indicate the morphological category to which the species belongs, e.g. *Pinus peuceformis* Zaklinskaja (1957) (pollen).

Comments: 1. Organ-species based on numerous morphological categories have appeared more frequently on general lists of fossil floras due to the broadening scope of paleobotanical investigations. An artificial expansion of the volume of genera or families should be avoided.

2. Extant and organ-species, although apparently equal in rank, by definition are not equal in many respects. This should be indicated when organ-species are combined with extant genera.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

107. *Recommendation PB. 6B:* Recommendation PB. 6B presently reads:

The names of form-genera should as a rule be used only in their original meaning, and subsequent alteration of the diagnostic characters of the form-genera is not desirable.

It is the purpose of this amendment to delete the present recommendation.

Comments: Recommendation PB. 6B is understandable only when one recognizes that two concepts, morphological and nomenclatorial, are interwoven into the term form-genus.

Nomenclatorial form-genera can be treated under the rules already established for natural and organ-genera. Methods for subsequent alterations of the diagnostic characters of such taxa are provided by the Code. They should apply to form-genera as well. Therefore this special regulation for form-genera alone is not necessary.

Apparently the Recommendation was intended to apply to form-genera being used in a morphological sense and lacking a type. Such names lie beyond the scope of the Code as they neglect one of its basic requirements — typification. It seems neither necessary nor desirable to provide regulations for them within the Code. Therefore it is felt that the Recommendation should be deleted.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

108. *Recommendation PB. 6F:* The present Recommendation reads:

Paleobotanists should exercise great caution when applying to well preserved specimens names which have been originally attached to poorly preserved specimens or to specimens which have been inadequately described or figured.

The proposed amendment would delete the last clause and reads as follows:

Paleobotanists should exercise great caution when applying to well preserved specimens names which have been originally attached to poorly preserved specimens.

Comments: Because science advances, what is considered to be an adequate description at present may be very inadequate in later years.

2. Specimens are available for re-examination, redescription, and re-illustration as long as they exist. The sanctioning of a procedure which neglects established names can only result in a chaotic increase of synonyms.

Proposed by: H. Tate Ames, A. J. Kovar, Gerhard O. W. Kremp.

Proposals nos. 109-115. Proposed by Alfred Traverse, Houston.

109. *Article 32:* Paragraph one: Delete the word "recent".

Comments: By the exclusion of fossil plants in this article, the nomenclature of fossil plants is technically rendered to a state of chaos, since without this article there can hardly be reasonable nomenclature. Effective publication is as critical for fossil plants as for extant plants, and the need for effective description certainly no less important.

110. *Article 35:* Delete the word "recent".

Comments: This article should be made to apply to fossil plants just as much as to extant plants, since nomenclatural types are used in the same way and are equally important for taxa of fossil plants. There is no reason to exclude fossil plants and one wonders if the word "recent" was not inserted here by mistake. Typification is as critical for fixing application of names of fossil as of extant plants, and there is no occasion for making a distinction.

111. *Article 39:* Delete the word "recent".

Comments: This article should apply equally to fossil plants. By excluding fossil

plants, it is implied that genera of fossil plants need not be accompanied by a description, which is in conflict with Article 36. There is no purpose in making a separate provision for fossil plants in this matter.

112. *Article PB. 3 (Appendix II)*: Delete entire article.

Comments: See argument for amendment of Article 39. It is regrettable to provide special rules for paleobotany in instances where the general rules are perfectly serviceable. Such provision of special rules only leads to confusion. Furthermore, this article is in direct contradiction to Article 36, in that Article 36 sets 1 Jan. 1912 as the date on or after which a description is required for (all) taxa of fossil plants, and Article PB. 3 sets the date 1 Jan. 1953, from which descriptions are required for genera of fossil plants.

113. *Recommendation PB. 6A:* Delete entire recommendation.

Comments: Paragraph one is unnecessary, inasmuch as an author could not adequately describe a genus without indicating for which kind of organ the genus is established.

Paragraph two is contrary to the spirit of botanical nomenclature as given in the preamble of the Code. The purpose of a name is only to provide a means of referring to a taxon, not to indicate its characters. Article 20, for example, is at pains to explain that the name of a genus "... may even be composed in an absolutely arbitrary manner." It seems quite illogical and undesirable for paleobotanists to be advised to violate the spirit of the Code.

114. *Recommendation PB. 6D:* Delete entire recommendation.

Comments: See argument above for deletion of Recommendation PB. 6A. A name only provides a means of referring to a taxon. It carries no implication of relationship, regardless of its etymological construction, as this, according to the Code, is not the function of the system of nomenclature. Names of fossil plants should be subject to the same considerations as to construction as those of other taxa.

115. *Recommendation PB. 6F:* Delete entire recommendation.

Comments: This recommendation is unnecessary and redundant, as it merely recommends that paleobotanists take care to identify their specimens correctly. Hence, this recommendation is not really nomenclatural.

Nos. 109-115 proposed by: Alfred Traverse, Houston.

116. *New Article: Priorité et changement des noms de genres d'organe.* Bien qu'un binôme paléobotanique n'ait pas de signification linnéenne, un genre de bois fossile rappelle le plus souvent une famille ou un groupe plus restreint à signification linnéenne.

1. Exemple: *Gynotrochoxylon africanum* Kräusel indique que, par sa structure, l'espèce rappelle le plan ligneux des *Gynotrochus* et qu'elle peut être classée dans la famille des *Rhizophoraceae.*

Cependant, le spécimen étudié, incomplètement conservé, n'avait livré à son descripteur qu'une partie de sa structure. Un échantillon mieux conservé du même gisement et de toute évidence appartenant à la même espèce linnéenne, permettant une description plus complète notamment avec du parenchyme vertical étagé bien marqué, montre qu'il s'agit, en fait, d'une *Tamaricaceae.* Le nom du fossile devient: *Tamaricoxylon africanum* (Kräusel) Boureau.

On ne peut admettre que le nom de genre *Gynotrochoxylon* soit maintenu par priorité. Le nom de genre *Tamaricoxylon* doit lui être substitué.

2. Règle: Un nom de genre de bois fossile rappelant, en première approximation, un groupe linnéen précis à l'exclusion de tout autre, reste valable tant que se trouve maintenue la signification botanique rappelée. A ce nom de genre doit être substitué tout autre nom qui rappellerait des affinités plus exactes, par rapport aux espèces vivantes connues.

3. Application et généralisation de la règle: Cette règle peut être appliquée d'abord à tous les bois fossiles, c'est-à-dire à tous les fragments de bois secondaires des Gymnospermes et Dicotylédones, ainsi qu'à tous les fragments du stipe des Monocotylédones. La règle peut être étendue ensuite à tous les genres d'organes de la Paléobotanique: feuilles, pollens.

Proposed by: Éd. Boureau (Paris).

XIII. CLARIFICATIONS OF THE CODE WITH RESPECT TO FOSSIL PLANT NAMES

John W. Funkhouser (Tulsa, Okla.)

Type Designation and the Publication of Fossil Plant Names.

The Code needs to be clarified on the requirement of types and the valid publication of fossil plant names. This need is demonstrated by the diametrically opposed interpretations now placed on the subject by leading botanists and paleobotanists, some of whom are on nomenclature committees. The question involved here has nothing to do with good taxonomic practice, but rather "legality", and is one that confronts the monographer in determining whether to accept or reject certain names.

Through correspondence, telephone calls, and personal interviews, I find there are two schools of thought on whether the designation of a nomenclatural type is necessary for a fossil plant name to be valid. One view is that it has been and is now necessary to designate a nomenclatural type. The other holds that it is not. The former base their arguments on the "spirit of the Code", as stated in Principle II:

"The application of names of taxonomic groups is determined by means of nomenclatural types."

and in the first paragraph of Article 7:

"The application of names of taxa of the rank of order or below is determined by means of *nomenclatural types*. A nomenclatural type (*typus*) is that constituent element of a taxon to which the name of the taxon is permanently attached, whether as an accepted name or as a synonym."

The argument that the designation of a type is not necessary for the valid publication of a fossil plant name can be based upon the following considerations: Under Article 6 is the definition:

"*Valid* publication is publication in accordance with Arts. 32-45." In Articles 32-45 no mention is made of typification except in Article 35, which deals with *recent* plants (discussed below).

Next, Article 7, Note 3 states:

"If no holotype has been indicated by the author who described a taxon, or when the holotype is lost or destroyed, a substitute for it may be chosen, unless its name must already be rejected under this Code. The author who makes this choice must be followed unless his choice is superseded under the provisions of Art. 8." Thus, there is the provision for selecting a type "If no holotype has been indicated by the author who described a taxon ..." By implication, the name may be valid before a type is designated. This same implication is found in Appendix IV, "Determination of types", part 3:

"A *lectotype* may be chosen only when an author failed to designate a holotype, or when, for species or taxa of lower rank, the type has been lost or destroyed (Art. 7, note 3)."

Further evidence is afforded by Recommendation PB. 6E from the appendix on fossil plants that the designation of a type is not required:

"In descriptions of new species it is desirable to mention which specimen is regarded as the type and to indicate in which museum or collection the type is to be found."

If types are required anyway, why is it necessary to recommend that they be indicated?

Article 35 shows that the neo-botanists didn't think that the designation of types was necessary under the previous status quo. Else they wouldn't have seen the need for adding this article. It reads:

"Publication on or after 1 Jan. 1958 of the name of a new taxon of recent plants of the rank of order or below is valid only when the nomenclatural type is indicated (see Arts. 7-10)."

My inclination is to agree with the philosophy that the present Code does not require the designation of a nomenclatural type for the valid publication of a fossil plant name. If this is true, it is a lamentable situation that should be corrected as soon as possible. I therefore propose that Article 35 be amended to read:

117. *Article 35:* "Publication on or after 1 Jan. 1958 of the name of a new taxon of recent or fossil plants of the rank of order or below is valid only when the nomenclatural type is indicated (see Arts. 7-10)." To

carry this date back to 1 Jan. 1958 would be perfectly legitimate in the light of Principle VI: "The Rules of nomenclature are retroactive except when expressly limited."

Even if the majority of paleobotanists disagree with this interpretation or the proposed amendment, I cannot see how they can escape the fact that clarification of the present situation is imperative. Regardless of whether types are or are not necessary, the requirement should be so clearly stated that there is no cause for argument.

Clarification of Article PB. 2.

The present wording of Article PB. 2 is: "The general rules applicable to the naming of recent plants apply also to the names of fossil plants and to those of organ-genera and form-genera."

This wording has caused a considerable amount of confusion by being vague and open to several interpretations. The chief uncertainties hinge on the precise meaning of "general rules". Does this mean all the rules, those that do not say "recent plants", or those that a given paleobotanist wants to apply to a given situation?

If it means *all* the rules, paleobotanists should have been taking cognizance of Article 34 ("... a name of a new taxon of recent plants ... must be accompanied by a Latin diagnosis ...")!

Most well-informed botanists and paleobotanists of whom I have asked opinions on this article hold that it means all articles of the Code apply to the naming of fossil plants unless specific exceptions are stated. Such exceptions would be indicated by the words "recent plants" (e.g., in Article 34 above). Also, any article specifying "fossil plants" would take precedence over a conflicting article in which this specification was not made. If this is what Article PB. 2 means, it seems desirable that this is what it should say. I, therefore, propose the following new wording for it:

118. *Article PB. 2:* "All articles of this Code apply to the nomenclature of fossil plants, including organ-genera and form-genera, unless specific exceptions are stated.

Application of Article 32 to Fossil Plants.

It is proposed that Article 32 be amended so that it will apply to fossil as well as to recent plants. This article presently reads:

"In order to be validly published, a name of a taxon of recent plants must be both (1) effectively published (see Art. 29) and (2) accompanied by a description of the taxon or by a reference (direct or indirect) to a previously and effectively published description of it.

"A combination is not validly published unless the author definitely indicates that the epithet or epithets concerned are to be used in that particular combination.

"A new transfer or combination published on or after 1 Jan. 1953 is not validly published unless the basionym (name-bringing or epithet-bringing synonym) is clearly indicated with a full reference to its author and original publication.

"Note 1. In certain circumstances, an illustration with analysis is accepted as equivalent to a description (see Arts. 41 and 43)."

"Note 2. Bibliographic errors of citation do not invalidate the publication of a new combination."

"Note 3. For names of plant taxa originally published as names of animals see Art. 45."

119. *Article 32:* The amendment could be effected by changing "recent plants" to "recent or fossil plants" in the first sentence.

That *effective* publication is necessary for valid publication is stated no where else in the articles of the Code except in 32, which does not now apply to fossil plants. The necessity for effective publication of fossil plant names is only intimated by Principle III ("The naming of taxonomic groups is based on the priority of publication.").

The first paragraph of Article 32 clearly states that a description is necessary for the valid publication of a name of any taxon of recent plants, regardless of rank. Valid publication of fossil plant names should have the same requirement. This is assumed in an indirect way by Article 36 "... a name of a new taxon of fossil plants ... must be accompanied by an illustration or figure showing the essential characters, *in addition to the description* [italics mine], or by a reference to a previously and effectively published illustration or figure." However, it is spelled out only for the names of genera and higher taxa (Article PB. 3: "From 1 Jan. 1953 the name of a genus or of a taxon of higher rank of fossil plants is not validly published unless it is accompanied by a description of the taxon or by a reference to a previously and effectively published description of it (see Art. 39).").

(43). Proposal for the conservation of the generic name 9343 **Allardia** Decaisne ex Endlicher, Gen. Pl. Suppl. 3: 70 (1843) (Compositae) versus *Waldheimia* Karelin & Kiriloff, Bull. Soc. Nat. Mosc. 15: 125 (1842) (Compositae).

Allardia Decaisne ex Endlicher (*nom. cons. prop.*).

Adopted by: Decaisne *in* Jacquemont, Voyage 4: 87 (1844); Walpers, Rep. 6: 204 (1847); Clarke, Comp. Ind. 145 (1876); Klatt, S.B. Akad. Muenchen 1878: 88; J. D. Hooker, Fl. Br. Ind. 3: 312 (1882); Duthie, N.W. Ind. Pl. 100 (1885); Hemsley, Journ. Linn. Soc. 35: 182 (1902); Bamb., Pl. Punj. 374 (1916).

Type species: *Allardia tomentosa* Decaisne.

Waldheimia Karelin & Kiriloff (*nom. rej. prop.*).

Adopted by: Regel, Acta Horti Petrop. 6: 308 (1879); Engler & Prantl, Nat. Pflanzenfam. 4(5): 200 (1900); Fedtch. Fl. Pam. 124 (1903); Ostenf. in Hed., S. Tibet 6(3): 38 (1922); Pamp. Fl. Carac. 10: 208 (1929); Wendl., Nytt. Mag. 1: 65 (1952).

Type species: *Waldheimia tridactylites* Karelin & Kiriloff.

Discussion: The two genera are synonymous. Endlicher gave a description of the genus *Allardia* and cited its original publication as "Decaisne in Jacquem. Voy. 87." He also cited *Waldheimia* as a doubtful synonym. There is also a mention of the former genus in Reichenbach, Der Deutsche Botaniker, 1: 81 (1841) in this form "Allardia Dcne ap. Jacquemont". Many subsequent botanists have followed these two authors and have regarded *Allardia* as published before *Waldheimia*; even the Index Kewensis adopts the former genus in preference to the latter. According to Sherborn and Woodward (Ann. Mag. Nat. Hist. ser. 7. 8: 334. 1901) "Jacquemont voyage Vol. IV parte Botanique" was published in 1844. This may mean that Reichenbach and Endlicher had seen page proof of the "Voyage" before its publication. If Sherborn and Woodward's date is accepted the relative priority of *Allardia* and *Waldheimia* is reversed, and some authors have already transferred all the species of the former genus to the latter. There is some evidence that Sherborn and Woodward's date is doubtful and there remains a possibility that *Allardia* was published in 1841. To remove confusion, it is proposed that that name be conserved, rather than that we should await the working out of the exact dates of the "Voyage", which may be long delayed.

Proposed by: Zain-ul-Abidin (Pakistan).

(44). Proposition pour la conservation du nom générique 8428. **Gaertnera** Lamarck (Rubiaceae vel Loganiaceae) versus *Gaertnera* Schreber (Malpighiaceae), *Gaertnera* Retzius (Campanulaceae), *Gaertneria* Medikus (Compositae) et *Gaertneria* Necker (Gentianaceae).

Gaertnera Lamarck, Tabl. Enc. Bot. Ill. 2: 273 *t. 167.* 1791; Texte 1: 379. ?1792. (*nom. cons. prop.*).

Spec. typ.: *G. vaginata* Lamarck, loc. cit.

Nom générique adopté par tous les auteurs dont quelques uns des plus suivis sont: DC., Prodr. 9: 32 (1845); Benth. in Benth. et Hook. f., Gen. Pl. 1: 798 (1876); Baill., Hist. Pl. 7: 412 (1880); Clarke in Hook. f., Fl. Brit. India 4: 91 (1883); K. Schum. in Engl. et Prantl, Pflanzenfam. 4(4): 124 (1891); Trimen, Fl. Ceylon 3: 176 (1895); Baker in This.-Dyer, Fl. Trop. Afr. 4(1): 542 (1904); Hutch. et Dalz., Fl. Trop. W. Afr. 2(1): 21 (1931).

Gaertnera Schreber, Gen. Pl. 1: 290 (1789) (*nom. rej. prop.*).

Synonyme de *Hiptage* Gaertn., Fruct. 2: 169, tab. 116 (1791) et non adopté quoique antérieur (cfr Niedenzu in Engl., Pflanzenr. IV 141 (Heft 91): 67 (1928)).

Gaertnera Retzius, Obs. 6: 24 (1791) (*nom. rej. prop.*).

Synonyme postérieur de *Sphenoclea* Gaertn., Fruct. 1: 113 (1788) (*nom. cons.*).

Gaertneria Medikus, Phil. Bot. 1: 45 (1789) (*nom. rej. prop.*).

Synonyme antérieur de *Franseria* Cav., Ic. 2: 78 (1793) (*nom. cons.*); ces deux noms sont déjà signalés comme tels par le Code: 276 (1956).

Gaertneria Necker, Elem. 2: 15 (1790) (*nom. rej. prop.*).

Synonyme postérieur de *Gentiana* L.

Gaertnera Lamarck est un nom généralement connu et utilisé; les 4 autres noms — dont 2 homonymes et 2 variantes orthographiques à traiter comme homonymes (Code

1956, art. 75) — au contraire, ne sont en usage.

Gaertnera Schreb. peut être proposé comme nom à rejeter en faveur de *Hiptage* Gaertn. tout indépendemment de la conservation de *Gaertnera* Lam.

Le cas de *Gaertneria* Med. est déjà résolu en partie par le Code même: quoique antérieur à *Franseria,* ce nom peut plus être employé pour indiquer ce genre. D'autre part, *Gaertneria* Med. n'a pas encore été employé comme nom d'un genre distinct de *Franseria* (cf. Code 1956, art. 14, note 4).

Gaertnera Retz. et *Gaertneria* Neck., synonymes postérieurs resp. de *Sphenoclea* et *Gentiana,* n'ont pas été utilisé non plus depuis au moins 50 ans.

Proposé par: E. Petit (Bruxelles).

The same proposal has been submitted by R. C. Bakhuizen van den Brink Jr. and C. G. G. J. van Steenis (Leiden) who give the following comments:

Now that the dates of publication of Lamarck's works have become better known, some of the genera described by him will need conservation. This is imminent for *Gaertnera* Lamarck [Illustr. 2: 273. *t. 167.* 1791] Tabl. Enc. Méth. Texte 1: 379. ?1792, which is threatened by 3 other generic names *Gaertnera* (or its orthographic variant *Gaertneria*). None of them has been in use for over a century and this proposal merely serves to legalize and stabilize the use of *Gaertnera* Lamarck; it does not entail other changes in nomenclature.

Gaertneria Medikus, Phil. Bot. 1: 45. 1789, was obviously the first one proposed; it is a genus of the Compositae which has been rejected under the present Rules in favour of *Franseria* Cav. 1793. (Compositae).

Gaertnera Schreber, Gen. 1: 290, n. 735, 1789, was obviously published somewhat later, as Gärtner replaced it by the new name *Hiptage* (Malpighiaceae).

Gaertneria Necker, Elem. 2: 15. 1790, was proposed to replace *Gentiana,* which was mentioned as a synonym rendering it superfluous, hence illegitimate.

Gaertnera Retzius, Obs. 6: 24. 1791, is a taxonomic synonym of *Sphenoclea* Gaertn. 1788. (Campanulaceae).

Gaertnera Lamarck is a rather widely distributed genus occurring throughout the Old World tropics. It has at variance been attributed to the Loganiaceae and Rubiaceae. The number of binomials described under it is 69, with 49 recognized species. As it is perfectly unambiguous in its use and has never given any reason to confusion with other genera and has been unanimously applied in one sense since over a century, as its conservation does not affect the status of any other correct generic name *Gaertnera,* and as lack of conservation would make necessary at least four dozen new combinations, its conservation would be distinctly favourable to stabilize botanical nomenclature. The first legitimate synonym is *Sykesia* Arn., Nova Acta Ac. Leop. 18: 351. 1836, under which name three binomials have been published.

(45) Proposal to conserve **Cordaianthus** Grand'Eury (1877) over *Botryoconus* Goeppert 1864.

Discussion: The name *Botryoconus* was proposed by Goeppert (Palaeont. 12: 152. 1864) for organs that resemble the inflorescences of Cordaitales. He says (p. 152): "Wenn diese fossilen Reste nicht zu *Noeggerathia* gehören sollten, so bringen wir den Namen *Botryoconus* und als Specialnamen *Goldenbergii* in Vorschlag. Eine gewisse Aehnlichkeit zeigt, diese Pflanze auch mit *Antholithes Pitcairniae* Lindl. Hutt. — aus der Englischen Koklenformation —". No further description is given.

Grand'Eury (Flora Carb. Dept. Loire, 1877) assigns several cordaitean inflorescences to *Botryoconus* (pp. 277-280, *pl. 33, figs. 1,* 2) including *Antholithes pitcairniae* of Lindley and Hutton as *Botryoconus pitcairniae.* These, however, are the same kind of organ that he assigns to his new genus *Cordaianthus* in the same volume (pp. 227-228).

Since *Cordaianthus* Grand'Eury (1877) is the name that has been in common use for cordaitean inflorescences, it is proposed that this name be conserved over *Botryoconus* Goeppert (1864).

Proposed by: C. A. Arnold (Ann Arbor, Mich.).

(46) Proposal to conserve **Cladophlebis** Seward (1894) over *Cladophlebis* Brongniart (1849).

Discussion: In 1849 Brongniart (Tableau, p. 107) proposed the genus *Cladophlebis* to include fossil ferns of the Section

Neuropteridis that he had seggregated within the genus *Pecopteris* in 1825 (Histoire, p. 320). The Section Neuropteridis, and consequently the genus *Cladophlebis,* contained both Carboniferous and Mesozoic species. Brongniart had named *Pecopteris defrancii,* a Carboniferous species, as the type of the Section Neuropteridis. Because he had included more Mesozoic than Carboniferous species in *Cladophlebis,* subsequent workers almost without exception have used the genus for Mesozoic ferns.

Saporta gave the first formal definition of *Cladophlebis* in 1873 (Plantes Jurassiques 1: 298), and later (Pl. Jur. 4: 357. 1891) he pointed out the distinctions between the Carboniferous and Mesozoic forms that Brongniart had included within it. In the meantime Schimper (Traité, 1874, p. 357) had given a more complete definition of *Cladophlebis* and this was slightly modified by Fontaine (U.S.G.S. Mon. 15: 67. 1889). Seward's definition of the genus (Wealden Flora 1: 87. 1894), is essentially the one of Schimper as modified by Fontaine, and is the one that has been in general use since 1894.

In 1903 Potonié (Abh. Beschr. foss. Pl. Lief. 1-16) showed that Brongniart's *Pecopteris defrancii,* and his type of the Section Neuropteridis and also the genus *Cladophlebis,* is a *Lonchopteris.* Consequently *Cladophlebis* became a synonym of *Lonchopteris* as the latter was proposed in 1836. To avoid the necessity of a new name for those Mesozoic ferns currently placed in *Cladophlebis,* it is proposed that *Cladophlebis* Seward be conserved over *Cladophlebis* Brongniart, and that *Cladophlebis albertsii* (Dunker) Brongniart be accepted as the type.

Proposed by: J. Stewart Lowther (Tacoma, U.S.A.).

(47). **Asterocalamites** W. P. Schimper 1862 (Terrain Trans. d. Vosges, Mém. Soc. Sc. nat. de Strassbourg 5: 321) (*nom. cons. prop.*).

Typus: vgl. Schimper l.c. und Taf. 1 (als *Calamites radiatus*).

Begründung: Wie aus den sorgfältigen Zusammenstellungen von Jongmans (Fossilium Catalogus II: Plantae, Pars 2: *Equisetales,* Berlin 1914) hervorgeht, ist die Nomenklatur dieser fast ausschliesslich unterkarbonischen Calamitaceen-Steinkerne, die durch durchlaufende Furchen charakterisiert sind, recht verworren. Seitdem man eigene Namen für die genannte Gattung aufgestellt hat, sind unter anderem folgende Bezeichnungen gewählt worden:

Bornia scrobiculata Sternberg 1825 S. 28 (Caspar Maria, Graf v. Sternberg, Versuch einer geognostisch-botanischen Darstellung der Flora der Vorwelt, Leipzig und Prag 1820-1838).

Bornia scrobiculata F. A. Roemer 1843 (Versteinerungen des Harzgebirges 1. *Taf. 1, Fig. 4*).

Asterocalamites W. P. Schimper 1862 siehe oben.

Bornia radiata W. P. Schimper 1869 (Traité de paléontologie végétale Paris 1: 335. *Taf. 24, Fig. 1-9*).

Archaeocalamites radiatus D. Stur 1875 (Die Culm-Flora. Heft 1, Abh. k.k. geol. Reichsanst. Wien 8: 2. *Taf. 1 ff.*).

Gegen die 3 vorstehenden Gattungsnamen lassen sich Bedenken vorbringen. Eine Entscheidung auf Grund der heute geltenden Nomenklaturregeln scheint recht schwer. Schon Jongmans l.c. S. 142 hat ausgeführt, dass zur Gattung *Bornia* ausser den von Jongmans als *Asterocalamites* bezeichneten Achsenorganen auch Blätter der Sphenopsiden gehören. *Bornia scrobiculata* Roemer bezieht sich allerdings wohl nur auf die später als *Asterocalamites* oder *Archaeocalamites* bezeichneten Achsenorgane. Jedoch muss man für *Bornia scrobiculata* Roemer die Frage aufwerfen, ob dieser Name als jüngeres Homonym gelten kann, wenn man die Gültigkeit des Namens *Bornia* Sternberg bestreitet. Der Name *Asterocalamites* Schimper 1862 wird deshalb zweifelhaft, weil Schimper selbst 1869 seine frühere Bezeichnung gegen *Bornia radiata* ausgewechselt hat [vgl. Art. 33 (1) des Code]. *Archaeocalamites* Stur aber ist das jüngste Synonym und könnte nur dann Gültigkeit beanspruchen, wenn man die beiden früheren Namen eindeutig verwerfen könnte.

Jongmans selbst (l.c. S. 55 f.) hatte auf die Unsicherheit der Bezeichnung hingewiesen und den Namen *Asterocalamites* in einer Weise vorgeschlagen, die dem heutigen Vorschlag als nomen conservandum entspricht. Diesem Vorschlag pflichte ich durch den obigen Antrag bei.

Proposed by: W. Zimmermann (Tübingen).

(48). **Lyginopteris** H. Potonié 1899 (Lehrb. Pfl.-palaent. p. 170) (*nom. cons. prop.*).

Begründung: *Lyginopteris,* vielfach als Typus der *Pteridospermae* betrachtet, war zunächst von Gurlie (Proc. Phil. Soc. Glasgow 1843) als *Lyginodendron* bezeichnet worden. Dabei handelte es sich um ein Organ-genus, das der auch bei *Lyginopteris* auftretenden *Dictyoxylon*-Struktur der Rinde entspricht. Diese Rindenstruktur kommt jedoch auch bei anderen Achsenorganen als bei *Lyginopteris* vor und es ist zweifelhaft, auf welches Fossil man den Namen *Lyginodendron* beziehen kann.

Erst Williamson 1873 hatte eindeutig den Namen *Lyginodendron* (allerdings ohne Diagnose) für die fragliche Art angewendet und bei Oliver und Scott 1905 ist die Pflanze nach den heutigen Nomenklaturregeln (wenn man von der unten behandelten Gattung *Calymmatotheca* absieht) eindeutig als *Lyginodendron* Oldhamium veröffentlicht worden.

Da so Zweifel bestehen, ob die durch Williamson 1873 sowie durch Oliver und Scott 1905 untersuchten Pflanzen zum Gurlieschen Typ gehören, hat Potonié 1899 für die genannten Pteridospermenstämme die Bezeichnung *Lyginopteris* neu gebildet. Dieser Name ist allgemein angenommen worden (vgl. z.B. Gothan, Lehrbuch der Palaeobotanik 1921, S. 126, Gothan und Weyland, Lehrbuch der Palaeobotanik 1954, S. 254 ff, Jongmans 1930, 1952 u.a.).

Der älteste, den Nomenklaturregeln voll entsprechende, d.h. auch mit Diagnose versehene, Name ist *Calymmatotheca* Stur 1877 (Die Culm-Flora Heft 2, Abh. k.k. geol. Reichanst. Bd. VIII Wien). Dieser Name bezieht sich auf die Cupula samt Stiel und hat unter den eindeutigen Pflanzen, die mit Diagnose versehen sind, die Priorität. Code 1956 bestimmt im Anhang 2, dass auch von "Exemplaren gesonderter Organe" Namen der Taxa verwendet werden können. Daher ist gelegentlich schon (vgl. z.B. Arnold, introduction to paleobotany, New York 1947) der Name *Calymmatotheca* als Ersatz für *Lyginodendron* und *Lyginopteris* verwendet worden. Es scheint mir aber unzweckmässig, die gebräuchlichen Bezeichnungen, die sich auf die häufigen und so gut charakterisierten Stämme beziehen, durch einen früher nicht gebräuchlichen und von einer Cupula hergeleiteten Namen zu ersetzen.

Proposed by: W. Zimmermann (Tübingen).

THE GENERIC NAMES PROPOSED FOR HYMENOMYCETES—VIII*

Auriculariaceae, Septobasidiaceae, Tremellaceae, Dacrymycetaceae

M. A. Donk

Myxomycidium Mass.—See "Clavariaceae."

Naematelia Fr. *per* Fr., Syst. Mycol. **2** (1): 227. 1822. — Etymology: *να(ι)μα,* (gelatinous) liquid; *εἰλέω,* I wrap. Gender: f. — Type species (selected): *Naematelia encephala* (Pers.) per Fr. (Tremellaceae).—This was previously called *Tremella encephaliformis* Willd. — Protonym: *Naematelia* Fr. *in* Liljeblad, Utkast svensk Flora, Uppl. 3, 608, 1816.—A nomen nudum: "528b) *Naematelia,* Slemknopp. / 1 *N. encephala:* fållad, blekröd. / V. på tall.", plus a second species, "*N. fragiformis.*" — Devalidated name: *Naematelia* Fr., Obs. mycol. **2**: 370, 376. 1818.—Introduced with two species, *N. encephala* "Pers." and *N. rubiformis* Fr. Fries added the remark "... est *Encephalium* Link." — Scope. Introduced in 1822 for three species. — Typification. The first species is now generally considered the type; it was suggested by Clements & Shear (Gen. Fungi 342. 1931). — Lloyd (Mycol. Writ. **7**: 1149. 1922) apparently took a later addition to the genus as the type: he used the name *Naematelia* sect. *Naematelia* Lloyd for the group of *N. nucleata* (Schw.) Fr. — Variant spellings: "*Mœmatelia*"; Brongn. *in* Dict. class. Hist. nat. **3**: 461-462. 1823. — "*Naematella*"; Link, Handb. Gewächse **3**: 339. 1833. — "*Nematelia*"; Fr., Summ. Veg. Scand. **2**: 476. 1849. — "*Nematella*"; Link *in* Abh. phys. Kl. Akad.

* Continued from p. 207.

Wiss. Berl. **1824**: 176. 1826 (as a synonym); Berk. & Br. *in* Ann. Mag. nat. Hist. IV **7**: 429. 1871.—See first quotation under *Hydnogloea*. — *"Nemathelium"*; *in* Rev. mycol. **5**: 67. 1883 (incidental mention).

Naematella.—See *Naematelia.*

Nakaiomyces Kobayasi *in* Sci. Rep. Tokyo Bunrika Daigaku, Sect. B **4**: 2. 1939. — Etymology: T. Nakai; *μύκης*, fungus. Gender: m. — Type species (by original designation): *Nakaiomyces nipponicus* Kobayasi (Tremellaceae). — Scope. Introduced with three species. — Status. According to Olive (*in* Bull. Torrey bot. Cl. **85**: 99. 1958) the type is a species of *Tremella* parasitized by a sphaeriaceous or phomaceous fungus. This would make the generic name a nomen confusum: the parasite induced the introduction of the genus.

Nematelia.—See *Naematelia.*

Nematella.—See *Naematelia.*

Nemathelium.—See *Naematelia.*

Neotyphula Wakef. *in* Kew Bull. **1934**: 252. — Etymology: *νέος*, new; the genus *Typhula*. Gender: f. — Type species (only original species): *Neotyphula guianensis* Wakef. (Auriculariaceae).—For additional notes on this species, see Martin (*in* Lloydia **11**: 121. 1948).

Olocolla.—See *Ulocolla.*

[*Ombrophila* "Quél." — This generic name is sometimes listed as a synonym of *Ditangium* P. Karst. (= *Craterocolla* Bref., q.v.), for instance by Neuhoff (*in* Pilze Mitteleurop. **2a**: 3. 1935). This is correct only when it is understood that Quélet (Ench. Fung. 230. 1886; Fl. mycol. France 20. 1888) merely applied an already existing name in an emended and untenable circumscription. Although he cited himself as the author, this means in this and similar cases, 'emended by Quélet.' It is quite likely that the species he considered type and called *Ombrophila pura* "Pers." was conspecific with *Ditangium insignis* P. Karst., which he mentioned as a synonym. Compare also:

> "*Ombrophila* est un genre de la famille des Trémellinées, voisin de *Exidia* et comprenant les espèces exosporées de l'ancien genre de Fries, comme *lilacina* (Champ. du Jura et des Vosges, II. p. 409, pl. v. f. 12); les autres espèces, étant endosporées, appartiennent aux genres *calloria* et *helotium*."—Quélet [*in* C.R. Ass. franç. Avanc. Sci. (La Rochelle, 1882) **11**: 402. 1883].
>
> "Le genre *Ombrophila*, Fr. Sum. Veg. p. 357, comprenait au moins deux genres appartenant à des familles éloignées: *Ombrophila violacea* (Hedw., mic. an. 1789, t. 8, f. A.), ascospore, type du genre *Ombrophila*, [Fr. em.] Karst., et *Ombrophila pura*, Pers., (Obs., I., p. 40), basidiospore, type du genre *Ombrophila*, [Fr. em.] Quél., Ench., page 23."—Quélet (*in* Rev. mycol. **14**: 67. 1892).

Ombrophila Fr. (Summ. Veg. Scand. **2**: 357. 1849) originally comprized three species: *O. violacea* Fr.[43] (*Peziza clavus β. violascens* A. & S.), *Bulgaria pura* ("Pers.") per Fr., and *Peziza abacina* Fr. According to Nannfeldt (see Neuhoff, *op. cit.* p. 6) Fries's *Bulgaria pura* as well as *Peziza rubella* Pers. (one of Quélet's species) are Ascomycetes, *Neobulgaria pura* ("Fr.") Petr. and *Hyalinia rubella* (Pers. per Fr.) Nannf. respectively. Neither is the type of *Peziza pura* Pers. a tremelleceous fungus. — *Ombrophila violacea* is now often accepted as the type species of Fries's generic name: compare Von Höhnel [*in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **127**: 22 sqq. 1918] who considered *O. violacea* the "Grundart." Seaver (N. Amer. Cup-fungi, Inoperc. 231. 1951) indicated the type species by the name of "*Peziza clavus* A. & S."]

Oncomyces Klotzsch *in* F. J. F. Meyen *in* Nova Acta Leop. Carol. **19** (Suppl. 1): 240. 1843. — Etymology: *ὄγκος*, swelling; *μύκης*, fungus. Gender: m. — Type species (selected): *Phlebia mesenterica* (Dicks. per S. F. Gray: Fr.) Fr. = *Auricularia mesenterica* (Dicks. per S. F. Gray: Fr.) Fr. (Auriculariaceae). — Protonym: *Oncomyces* Klotzsch *in* Linnaea **7**: 195. 1832 (as *Oycomyces*).—Nomen nudum. — Basinym: "*Auricularia* Fr. Epicrisis. I. p. 555." For this group, see also under *Auricularia* Bull. per Mérat. — Valid publication. Since Klotzsch did not add a description the valid publication of *Oncomyces* depends on the reference to the description under "*Auricularia* Fr. Epicrisis. I. p. 555," which may be interpreted as a shortened form of '*Auricularia* Bull. [per Mérat] emend. Fr., Epicr.

[43] The identification of this species with *Octospora violacea* Hedw. is erroneous.

555. 1838': Fries captioned the genus "*Auricularia* (Bull. Ch. p. 277. sp. 1.)." — Scope. The Friesian group referred to included four species of which the first is *A. mesenterica*. The latter was listed by Klotzsch. — Typification. *Auricularia mesenterica* is here selected as the type species. — Typonyms: *Agarico-gelicidium* Paul. (1793; devalidated name), *Zonaria* Roussel (1806; devalidated name), *Auricularia* Bull.: Juss. (1789; devalidated name) = *Auricularia* Bull. per Mérat 1821, and *Patila* Adans. per O.K. (1891).

Oycomyces.—See *Oncomyces.*

Ordonia Racib. *in* Bull. int. Acad. Cracovie (Cl. Sci. math. nat.) **3**: 360. 1909. — Etymology: —. Gender: f. — Type species (only original species): *Ordonia orthobasidion* Racib. (Septobasidiaceae).—An imperfectly known species now regarded as belonging to *Septobasidium* Pat.; it is not mentioned by Couch (Genus Septob. 1938). Clements & Shear (Gen. Fungi 343. 1931) changed the specific epithet into 'orthobasidium.'

Pachysterigma J.-Olsen. apud Bref.—See "Thelephoraceae."

Patila Adans. *per* O.K., Rev. Gen. Pl. **2**: 864. 1891. — Etymology: compare Latin, patella, (sacrificing) dish? Gender: f. — Type species (selected): *Agaricum* ordo VIII species no. 5 Mich. (Auriculariaceae).—This species has been referred to *Stereum purpureum* (Pers. per Fr.) Fr., for instance by Steudel (Nomencl. Pl. crypt. 407. 1824). With O. Kuntze, I believe this identification to be incorrect and would rather refer it to *Auricularia mesenterica* (Dicks. per S. F. Gray: Fr.) Fr. It was described as gelatinous. — Devalidated name: *Patila* Adans., Fam. Pl. **2**: 5. 1763. —Adanson specifically cited "*Agaricum.* Mich. t. 66 f. 2. 4." The two species thus indicated (Micheli, Nov. Pl. Gen. 124. 1729; *Agaricum* ordo VIII spp. nos. 7 & 5) have been identified as *Stereum hirsutum* (Willd. per Fr.) S. F. Gray and *S. purpureum*, by Steudel (*l.c.*). As to the correctness of the second determination, see above. — "[Substance] Gelatineus" is mentioned in Adanson's generic description. — Although Adanson's nomenclatorial system is neither Tournefortian nor Linnean, his names would have been accepted as validly published if the starting-point date for fungi had not been altered. — Valid publication & scope. In the absence of an accompanying description the valid publication of *Patila* as restored by Kuntze depends on the reference to Adanson's pre-starting-point description, "*Patila* Ad. (1763) fam. II 5"; the present wording of Art. 39 (2) admits this as sufficient. This means that the original scope of the genus is that of Adanson's, although Kuntze restored *Patila* for *Auricularia* Bull. as compiled by Saccardo (Syll. Fung. **6**: 762. 1888). — Typification. O. Kuntze indicated one of Micheli's species, which he identified with *A. mesenterica* as type. — Variant spelling: "*Patilla*"; Leman *in* Dict. Sci. nat. **38**: 137. 1825.—Leman discussed, but did not accept the name of, Adanson's genus. — Homonym. Presumably *Patella* Weber per Morgan (1902; Pezizales, Ascomycetes) should not be considered a homonym. — Typonyms: *Agarico-gelicidium* Paul. (1793; devalidated name), *Zonaria* Roussel (1806; devalidated name), *Auricularia* Bull. per Mérat (1821), and *Oncomyces* Klotzsch (1843).

Patilla.—See *Patila.*

Patouillardina Bres. *apud* J. Rick *in* Brotéria **5**: 7. 1906 (see Martin *in* Mycologia **31**: 510. 1939); *in* Ann. mycol. **18**: 52. 1920. — Etymology: N. Patouillard. Gender: f. — Type species (only original species): *Patouillardina cinerea* Bres. apud J. Rick (Tremellaceae or Auriculariaceae).—According to Rogers (*in* Mycologia **28**: 398. 1936) *Atractobasidium corticioides* G. W. Mart. and *Protograndinia cinerea* J. Rick are conspecific. At about the same time Martin (*in* Mycologia **28**: 198. 1936; **31**: 511; 1939) identified *Atractobasidium corticioides* with *Platygloea grandinia* J. Rick. The correct name for the type species would appear to be *Patouillardina cinerea.* — Valid publication. There should be no doubt that this generic name was validly published in 1906 by a descriptio generico-specifica. — Isonym. Compare *Protocorticium.* — Homonym: *Patouillardina* Arnaud 1917 (Ascomycetes). — Typonyms: *Protograndinia* J. Rick (1933) and *Atractobasidium* G. W. Mart. (1935).

Phaeotremella Rea *in* Trans. Brit. mycol. Soc. **3**: 377. 1912. — Etymology: φαιός, dusky; the genus *Tremella.* Gender: f. — Type species (only original species): *Phaeotremella pseudofoliacea* Rea (Tremellaceae).—After a rather superficial examination of Rea's specimen in the Kew Herbarium many years ago, I inclined to regard the species as synonymous with *Tremella foliacea* (Pers. per S. F. Gray)

Pers.: Fr. Neuhoff (*in* Z. Pilzk. **10**: 72. 1931) suspected the same, and Kobayasi (*in* Sci. Rep. Tokyo Bunrika Daigaku B **4**: 32. 1931) made Rea's species a variety of *T. foliacea*. However, Martin (in Mycologia **28**: 214. 1936) seems to identify it with *Tremella frondosa* Fr. (sensu Neuhoff). — Remark. Clements & Shear (Gen. Fungi 342. 1931) mention the type under the corrupted name of "*P. pseudofolia* Rea."

Phleogena Link, Handb. Gewächse **3**: 396. 1833. — Etymology: *φλοιός*, bark; *γένος* race. Gender: f. — Type species (only original species): *Onygena faginea* Fr. (Auriculariaceae). — Variant spelling: "*Phleogenia*"; Donk *in* Meded. Nederl. mycol. Ver. **18-20**: 94. 1931.—An unintentional error. — Typonyms: *Botryochaete* Corda (1854) and *Ecchyna* Fr. ex Boud. (1888).

Phleogenia.—See *Phleogena.*

Phlogiotes.—See *Phlogiotis.*

Phlogiotis Quél., Ench. Fung. 202. 1886. — Etymology: *φλόξ*, *φλογός*, flame; *οὖς*, *ὠτός*, ear. Gender: f. — Type species (only original species): *Tremella rufa* Jacq. = *Guepinia helvelloides* (DC. per Pers.) Fr. = *Tremiscus helvelloides* (DC. per Pers.: Fr.) Donk (Tremellaceae) see page 164. — Variant spellings: "*Philogiotis*"; Bisby, Intr. Taxon. Nomencl. Fungi 103. 1945.—A typographical error. — "*Phlogiotes*"; Alexopoulos, Intr. Mycol. 358. 1952.—Presumably an error. — Remark. See also under *Gyrocephalus* Pers. — Typonyms: *Guepinia* Fr. (1825; preoccupied) and *Tremiscus* (Pers.) Lév. (1846). And compare *Hepataria* Rafin. (1808; not validly published).

[*Phyllopta* (Fr.) Fr., Syst. Orb. Veg. 94. 1825; Syst. mycol. **3** (Index): 141. 1832. — Protonym: *Phyllopta* Fr., Syst. mycol. **1**: 2. 1821 (nomen nudum).—Name only. — Basinym: *Tremella* subgen. *Phyllopta* Fr., Syst. mycol. **2** (1): 219. 1822.—Based on *Tremella* (*Phyllopta*) *biparasitica* Fr., found on the stalk of *Nyctalis parasitica* Fr., and a second species. The true nature of the first 'species' has not yet been established. There is a single specimen of it at Upsala in Fries's herbarium, which I did not dare to study microscopically.]

Phyllotremella Lloyd.—See "Agaricaceae."

[*Pilacre* Fr., Syst. Orb. Veg. 364. 1825; Fr., Syst. mycol. **3** (1): 204. 1829. — Type species: *Stilbum incarnatum* Weinm. in litt. (Fries, *l.c.*, 1825) = *Pilacre weinmanni* Fr. (*l.c.*, 1829). The only species on which the genus was based! A few years afterwards two more species were added (*P. subterranea* Weinm. and *P. friesii* Weinm.), both by Weinmann (*in* Flora **15**: 458. 1832). Boudier [*in* J. Bot. (ed. Morot), Paris **2**: 261-264. 1888] was convinced that *P. weinmanni* and *Roesleria hypogaea* Thüm. & Pass. apud Thüm. were one and the same species and the two species described by Weinmann he believed to be merely varieties. He doubted the identity of this fungus with *Coniocybe pallida* (Pers.) Fr. = *C. nivea* (Hoffm.) Arnold because the latter was generally taken to be a lichen. Von Keissler (*in* Rabenh. Krypt.-Fl., 2. Aufl., Flecht., I. Abt. **2**: 690-696. 1938) states that "die Annahme nicht von der Hand zu weisen [ist], dass gewisse Fälle vorkommen, wo dieser Organismus ohne algenführenden Thallus sich entwickelt, mit anderen Worten, wie ein Pilz sich verhält ..." He listed *P. friesii*, *P. subterranea*, and *Roesleria hypogaea* (the latter two with a point of interrogation) as synonyms of *Coniocybe nivea*. Patouillard (Tab. anal. Fung. **2**: 37 *no. 595.* 1887) described and figured *Roesleria hypogaea* under the name of *Pilacre friesii*. — The later incorporation of some species (all conspecific) of which one, *P. petersii* Berk. & Br., was to be thoroughly studied and beautifully depicted by Brefeld, shifted the attention to these newcomers. Thus Berkeley & Broome (*in* Ann. Mag. nat. Hist. II **5**: 365. 1850) included *Onygena faginea* Fr. (Auriculariaceae). Both Shear (*in* Int. Rules bot. Nomencl., 3. Ausg., 127. 1935)[44] and Maire (*ibid.*, p. 123) proposed to conserve "*Pilacre* (Fr.) Weinm. Linnaea IX. (1834) 413" against *Phleogena* Link (1833), q.v.[45] They both chose *Pilacre faginea* (Fr.) Berk. & Br. as the substitute type species. This is not at all supportable. First, Fries never made *Pilacre* a subdivision of a genus, as

[44] Already Shear and Dodge (*in* J. agr. Res **30**: 415. 1925) and Clements & Shear (Gen. Fungi 341. 1931) had suggested *Pilacre faginea* Fr. as the type species of *Pilacre* Fr. (1829).

[45] The mention of *Phlogiotis* Quél. (1886), q.v., in Maire's proposal is doubtlessly caused by an error of printing. The name was certainly intended as a nomen rejiciendum under *Guepinia*, at the base of page 122.

is implied by the citation '*Pilacre* (Fr.) Weinm.' Secondly, Weinmann (*l.c.*) did not add a generic description: he merely referred to Fries's publication of the name in 1832 and added two species to Fries's genus. Finally, *Onygena faginea* is not among the species which he mentioned, and it is at least doubtful whether any of his species may be identified with it. Moreover, *Pilacre*, as misapplied by later authors, was deliberately rejected by most French authors, for instance, by Boudier, Costantin [*in* J. Bot. (ed. Morot), Paris **2**: 229. 1888], and Patouillard, who made *Pilacre* the name of an ascomycetous genus and preferred the use of *Ecchyna* (q.v.) for the auriculariaceous taxon. The proposal, as formulated, must be unconditionally rejected. Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 192-194. 1941) was of the opinion that insufficient reason had been brought forward to justify conservation of such a small genus (as the one to which *O. faginea* belongs)[46] for which the correct name (*Phleogena* Link 1833) had been established and re-introduced (Weese *in* Ber. dtsch. bot. Ges. **37**: 512-519. 1919), and accepted by several later mycologists. Another vote for rejection of the proposal was cast by Rogers (*in* Farlowia **3**: 470. 1949). The proposal was rejected by ballot by the Special Committee for Fungi (*in* Taxon **2**: 32. 1953; *in* Mycologia **45**: 320. 1953).]

Pilacrella J. Schroet. *in* Cohn, Krypt.-Fl. Schles. **3** (1): 384. 1887. — Etymology: diminutive of *Pilacre*. Gender: f. — Type species (only original species): *Pilacrella solani* Cohn & J. Schroet. apud J. Schroet. (Auriculariaceae).

Platycarpa Couch *in* Mycologia **41**: 427. 1949. — Etymology: *πλατύς*, flat; *καρπός*, fruit. Gender: f. — Type species (by original designation, cf. Couch, *op. cit.* p. 439): *Septobasidium polypodii* Couch (Auriculariaceae). — Scope. Instituted for two species, the type and *Platycarpa boliviensis* Couch.

Platiglaea.—See *Platygloea.*

Platigloea.—See *Platygloea.*

Platygloea J. Schroet. *in* Cohn, Krypt.-Fl. Schles. **3** (1): 384. 1887. — Etymology: *πλατύς*, flat; *γλοιός*, any sticky substance. Gender: f. — Type species (selected): "*Pl*[*atygloea*] *nigricans* (Fries 1822? *Agyrium n*[*igricans*] *minus*)" (Auriculariaceae).— Schroeter referred to *Agyrium nigricans* "b. minus, subsphaericum. ... in *Tilia*" [Fries, Syst. mycol. **2** (1): 233. 1822] rather than to the typical form of *A. nigricans*. Hence the name he uses for his fungus is a misapplication (with the exclusion of the type of its basinym). The Friesian species (type) is, as far as known, not a basidiomycete; the species Schroeter had in mind was identified by Von Höhnel (*in* Ann. Mycol. **2**: 271. 1904) with *Stictis tiliae* Lasch = *Achroomyces disciformis* (Fr.) Donk (see under *Achroomyces* in the present paper). — Scope. Introduced with three species: the one here indicated as the type and *Platygloea fimicola* J. Schroet. and *P. effusa* J. Schroet. — Typification. The first species, as "*Platygloea nigricans* Schroet.," has been suggested as type by Clements & Shear (Gen. Fungi 341. 1931) and has been implicitly adopted by perhaps all authors who accepted the genus, it being the best known of the original species. Explicit indication by Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 67. 1944; **19** (3): 95. 1952]. — Variant spelling: "*Platiglaea*"; *in* Rev. mycol. **11**: 56. 1889 (incidental mention).—An error. — "*Platigloea*"; Pat., Essai taxon. Hym. 13. 1900. — Typonyms: *Tachaphantium* Bref. (1888), and compare *Achroomyces* Bonord. (1851), q.v.

Podobasidium Lagerh.; Pat., Essai taxon. Hym. 10. 1900 (in synonymy). — A manuscript name cited as a synonym of "*Septobasidium* B. *Gausapia* Fr." See also under *Campylobasidium* and *Septobasidium*. — At an earlier occasion Patouillard & Lagerheim (*in* Bull. Soc. mycol France **8**: 120. 1892) divided *Septobasidium* in two subdivisions, of which "b," for which *Podobasidium* Lagerh. was cited (as a synonym? or as a subdivisional epithet?), contained only one definitely included species, viz. *Septobasidium pedicellatum* (Schw.: Fr.) Pat. sensu Pat. = *S. couchi* Donk (see the present paper, p. 197).

Polyorus.—See *Polyozus.*

Polyozus P. Karst.—See "Clavariaceae."

Poroauricula "McGinty"; Lloyd.—See "Polyporaceae."

Protocorticium J. Rick *in* Brotéria **5**: 7. 1907 (not definitely accepted). — In an

[46] The genus now comprised at its best two or three species!

observation to *Patouillardina cinerea* (the type species of *Patouillardina* Bres. apud J. Rick, q.v.) Rick remarked: "So haben wir hier zu *Protohydnum, Protomerulius* ein *Protocorticium* allerdings mit *Auricularia-* u. nicht *Tremella*-Basidie."

Protodontia Höhn. *in* S.B. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **116**: 83. 1907. — Etymology: *πρῶτος,* first; the genus *Odontia.* Gender: f. — Type species (only original species): *Protodontia uda* Höhn. (Tremellaceae).

Protograndinia J. Rick *in* Egatea **18**: 213. 1933. — Etymology: *πρῶτος,* first; the genus *Grandinia.* Gender: f. — Type species (only original species): *Protograndinia cinerea* J. Rick (Auriculariaceae).—For this species, see under *Patouillardina.* — Valid publication. A specific description only (descriptio generico-specifica). — Typonyms: *Patouillardina* Bres. apud J. Rick (1906) and *Atractobasidium* G. W. Mart. (1935).

Protohydnum A. Möll. *in* Bot. Mitth. Tropen **8**: 131, 173. 1895. — Etymology: *πρῶτος,* first; the genus *Hydnum.* Gender: n. — Type species (only original species): *Protohydnum cartilagineum* A. Möll. (Tremellaceae).—For additional notes on this species, see Martin (*in* Lloydia **4**: 265. 1941).

Protomerulius A. Möll. *in* Bot. Mitth. Tropen **7**: 60. 1895; **8**: 129, 172. 1895. — Etymology: *πρῶτος,* first; the genus *Merulius.* Gender: m. — Type species (only original species): *Protomerulius brasiliensis* A. Möll. (Tremellaceae). — Valid publication. Descriptio generico-specifica when first published.

[*Protonema* Agardh, Syst. Alg. xxii, 43. 1824. — This generic name has been listed as a synonym of *Helicobasidium* Pat., for instance by Ainsworth & Bisby (Dict. Fungi 246. 1943; "Desm."). *Protonema* is not a fungus genus[47] and it is just mentioned due to the fact that Desmazières (Pl. crypt. France No. 651. 1834; as *Protonema brebissonii* Desm.) attributed a species to *Protonema* that afterwards was identified (cf. Sacc., Syll. Fung. **6**: 666. 1888) with the fungus called *Hypochnus purpureus* L. Tul. = *Helicobasidium purpureum* Pat. Compare also L. Tulasne [*in* Ann. Sci. nat. (Bot.) V **4**: 295. 1865]. A specimen of the type-distribution (UPS) confirms the identification and the correct name for the species seems to be *Helicobasidium brebissonii* (Desm.) Donk (cf. this paper p. 164).]

Protopistillaria J. Rick *in* Egatea **18**: 210. 1933. — Etymology: *πρῶτος,* first; the genus *Pistillaria.* Gender: f. — Type species (only original species): *Protopistillaria muscigena* J. Rick (Auriculariaceae).—Identified with *Eocronartium muscicola* (Pers. per Fr.) Fitzp. by Martin [*in* Lloydia **5**: 158. 1942; *in* Stud. nat. Hist. Univ. Iowa **18** (3): 63. 1944]. — Typonyms: *Eocronartium* Atk. (1902) and *Musciclavus* Velen. (1939; not validly published).

Protoradulum J. Rick *in* Egatea **18**: 348. 1933. — Etymology: *πρῶτος,* first; the genus *Radulum.* Gender: n. — Type species (only original species): *Protoradulum ceraceovitreum* J. Rick (Tremellaceae?).

Prototremella Pat.—See "Thelephoraceae."

Pseudohydnum P. Karst. *in* Notis. Sällsk. Fauna Fl. fenn. Förh. **9**: 374. 1868. — Etymology: *ψευδής,* false; the genus *Hydnum.* Gender: n. — Type species (only original species): *Hydnum gelatinosum* Scop. per Fr. (Tremellaceae). — Valid publication. The genus was placed in the "Tremellini Tul." and the name accompanied by a very short description: "hymenio aculeato." — Remark. See also "Remark" under *Tremellodon.* — Homonym: *Pseudohydnum* J. Rick (1904; "Hydnaceae"). — Typonyms: *Echinagaricus* Haller (1742; pre-Linnean name), *Hydnogloea* Curr. apud Berk. & Br. (1871), and *Tremellodon* (Pers.) Fr. (1874).

Pseudotremellodendron Reid *in* Kew Bull. **1956**: 535. — Etymology: *ψευδής,* false; the genus *Tremellodendron.* Gender: n. — Type species (by original designation and only species): *Clavaria pusio* Berk. (Tremellaceae).

Rudetum "McGinty"; Lloyd, Mycol. Writ. **6**: 888, 1919; see also Stevenson & Cash (*in* Bull. Lloyd Libr. No. 35: 47. 1936). — Published for the pileate species of *Septobasidium* Pat., of which three were mention-

[47] "Typus *Byssus velutinus* L.," indicated by Fries (Syst. Orb. Veg. 313. 1825).

ed. Stevenson & Cash (*l.c.*) stated of one of these: "Type, *R. rameale* (Berk.) Lloyd." = *Septobasidium rameale* (Berk. & Br.) Bres. 1915 (Septobasidiaceae). According to Patouillard and Couch (Gen. Septob. 270. 1938) this is a synonym of *Septobasidium pteruloides* (Mont.) Lloyd. — Not being definitely accepted by Lloyd, the publishing author, the name was not validly published. For some general remarks on the McGinty names, see Part I of the present series (Donk *in* Reinwardtia **1**: 205. 1951).

Saccoblastia A. Möll. *in* Bot. Mitth. Tropen **8**: 16, 162. 1895. — Etymology: *σάκκος*, bag; *βλαστός*, sprout. Gender: f. — Type species (selected): *Saccoblastia ovispora* A. Möll. (Auriculariaceae).—This species has been identified by Miss G. E. Baker (*in* Ann. Missouri bot. Gdn **23**: 92. 1936; *in* Mycologia **38**: 631. 1946) with *Helicogloea lagerheimii* Pat. and she is now often followed. Her conclusion seems highly questionable. *Helicogloea lagerheimi* is waxy to soft gelatinous. This does not agree with Möller's species, which, rather, has floccose fruit-bodies. Möller's description includes:

> "Sie bildete einen dünnen, fast durchsichtigen lockeren weissen Ueberzug .... Bei sehr feuchtem Wetter sieht dieser Ueberzug fast schleimig aus, da das Gewirr der Fäden Wasser zwischen sich festhält, bei trocknerem Wetter dagegen bemerkt man nur einen lockeren Hyphenfilz, der bei vollständigen Trocknen zur Unsichtbarkeit zusammenfält. Aus einem wirren, dem Substrat sich anschmiegenden Filze von Fäden ...." —A. Möller (*op. cit.* p. 16).

The hypochnoid nature is testified by: "lockeren ... Ueberzug ... lockeren Hyphenfilz ... Filze von Fäden." A possible indication of a gelatinous fruit-body might perhaps be: "fast durchsichtigen ... Ueberzug .... Bei sehr feuchten Wetter sieht dieser Ueberzug fast schleimig aus," but Möller stated explicitly that in moist weather the loose felt holds water between its threads. The true nature of the texture may become important when the genus *Helicogloea* Pat. apud Pat. & Lagerh. will be divided. — Scope. Introduced with two species. — Typification. Clements & Shear (Gen. Fungi 341. 1931) suggested Möller's first species, *Saccoblastia ovispora*. From Möller's discussion one would conclude that this was indeed his leading species.

Saccogloea (Bourd. & G.) Arnaud *in* Bull. Soc. mycol. France **67**: 187. 1951 (nomen nudum). — Type species (only species mentioned and only original species of basinym): *Saccoblastia sebacea* Bourd. & G. — Basinym: *Saccoblastia* sect. *Saccogloea* Bourd. & G., Hym. France 5. "1927" [1928].[48] —One original species, *Saccoblastia sebacea* Bourd. & G. — Arnaud's account of the genus is as follows: "Des probasides existent déja chez certaines Auriculariales ordinaires, chez les *Septobasidium* ..., *Saccogloea* (fig. 2 Q) ...." The explanation to his figure reads: "Q. *Saccoglaea* [!] *sebacea* Bourd. & Galz. var." (*op. cit.* p. 197). It is doubtful whether this generic name is validly published: no reference to the basinym (not even an author's citation), and what has to be taken as the 'description' is not in Latin and merely states that there are probasidia, without differentiating *Saccogloea* from *Septobasidium*. — The figure published by Arnaud, if not drawn after a different species from Bourdot & Galzin's, may perhaps be an inaccurate representation of the basidium.

Sebacina Tul. *in* J. Linn. Soc., Lond. (Bot.) **13**: 36. 1871; *in* Ann. Sci. nat. (Bot.) V **15**: 224. 1872. — Etymology: sebaceus, greasy. Gender: f. — Type species (selected): *Corticium incrustans* Pers. (devalidated name; not *Corticium incrustans* Höhn. & L. 1906) (Tremellaceae). — Scope. Introduced with two species, *Corticium incrustans* and "*C*[*orticium*] *caesium* Pers." (sensu Tul.), in this order. — Typification. *Corticium incrustans* was undoubtedly the leading species for the authors and has been considered the type by Clements & Shear [Gen. Fungi 242. 1931; "*S. laciniata* (Bull.) Bres."]; McGuire (*in* Lloydia **4**: 10. 1941); Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 35. 1944; **19** (3): 45. 1952]; and Ervin (*in* Mycologia **49**: 122. 1957). — Remark. The description accompanying the generic name is very poor, although detailed descriptions were given of the two species. — Variant spelling: "*Sebacinia*"; Sacc., Syll. Fung. **6**: 761. 1888 (as a synonym).

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[48] The epithet 'Saccogloea' is printed in italics in the Index to Bourdot & Galzin's book which explains that "Les synonymes et Sections de Genre sont en italique." In the text no rank of the subdivision is indicated.

Sebacinia.—See *Sebacina*.

Seismosarca Cooke *in* Grevillea **18**: 25. 1889; Handb. Austr. Fungi 203 *pl. 12 f. 94.* 1892. — Etymology: σειομός, shaking; σαρξ, σαρκός, flesh. Gender: f. — Type species (only original species): *Seismosarca hydrophora* Cooke (Auriculariaceae).—This species has long been misunderstood and what was recorded and redescribed under this name in later years, for instance, by Lloyd [Mycol. Writ. **5**: 629 *f. 894.* 1917; **5** (Letter 62): 6 Note 431. 1916] and Martin (*in* Mycologia **28**: 217 *f. 2: 1-3.* 1936) proved to be a quite different species as was shown by Martin (*in* Mycologia **43**: 112-113. 1951), who published notes on the type collection on this occasion and Lowy's suggestion that the specimen may be referable to *Auricularia tenuis* (Lév.) Farl. (a species of *Hirneola* Fr. 1848).

Septobasidium Pat. *in* J. Bot. (ed. Morot), Paris **6**: 63. Feb. 16, 1892; *in* Bull. Soc. mycol. France **7**: xxxv. "1891" [1892].[49] — Etymology: septum, partition; basidium. Gender: n. — Type species (selected): *Septobasidium velutinum* Pat. (Septobasidiaceae). — Scope. Introduced with two species, the one selected as the type and *Thelephora pedicellata* Schw.: Fr. sensu Pat. = *Septobasidium couchii* Donk.[50] — Typification.

> "Clements and Shear (Gen. Fungi 341. 1931) designate *S. pedicellatum* Pat. as the type. This, and *S. velutinum* Pat. were the only species mentioned in the original publication in which the genus was established. In a later paper, published the same year (Bull. Soc. Myc. Fr. **8**: 120. 1892), Patouillard and Lagerheim divided the genus into two sections, [*t*]*ypicae,* represented by *velutinum* and *Podobasidium,* represented by *pedicellatum.* . . . Under the circumstances, it seems clear that *S. velutinum* should be taken as the type."—Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 71. 1944].

— The earlier selection of the other original species, previously suggested by Clements & Shear (*l.c.*), and adopted by Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 158. 1941) should be rejected in view of the above argument. — Nomen conservandum. Boedijn & Steinmann (*in* Bull. Jard. bot. Buitenzorg III **11**: 171 footnote. 1931) proposed *Septobasidium* for conservation against *Glenospora* Berk. & Desm. (1849). This was supported by Couch (Genus Septob. 68. 1938) and Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 178. 1941); the latter author proposed *Gausapia* Fr. (1825) as an additional nomen rejiciendum, and later (Donk *in* Bull. bot. Gdns Buitenzorg III **18**: 108-110. 1949) also *Campylobasidium* Lagerh. ex F. Ludwig (1892). Rogers (*in* Farlowia **3**: 476. 1949; **4**: 34. 1950) supported the proposal. It was accepted by ballot by the Special Committee for Fungi (*in* Code 77. 1952; *in* Mycologia **45**: 316. 1953) and by the Paris Congress (*in* Taxon **4**: 162. 1955). The genus, under the name of *Septobasidium,* now consists of more than 175 species, and the obligation to adopt the correct name would have been very disturbing. The relative dates of *Campylobasidium* and *Septobasidium,* both published in 1892, have not yet been established.

Septocolla Bonord., Handb. allg. Mykol. 152. 1851. — Etymology: septum, partition: κόλλα, glue. Gender: f. — Type species (only original species): *Septocolla adpressa* Bonord. (Dacrymycetaceae).—A species (perfect stage) of *Dacrymyces* C. Nees per Fr. — Valid publication. Descriptio generico-specifica.

Sirobasidium Lagerh. & Pat. *in* J. Bot. (ed. Morot), Paris **6**: 468. 1892 (description reproduced by A. Möller *in* Bot. Mitth. Trop. **8**: 165. 1895). — Etymology: σειρά, string; basidium. Gender: n. — Type species (selected): *Sirobasidium sanguineum* Lagerh. & Pat. (Tremellaceae).—For some notes on this species, see Martin (*in* Mycologia **28**: 218. 1936). — Scope. Introduced with two species, *S. albidum* Lagerh. & Pat. and *S. sanguineum,* described in this order. — Typification. The species here indicated was suggested by Clements & Shear (Gen. Fungi 342. 1931). The selection of *S. albidum* would have been preferable because Patouillard (Essai taxon. Hym. 18. 1900) depicted it to illustrate the genus.

Soppittiella Mass.—See "Thelphoraceae."

Spicularia Chev., Fl. gén. Env. Paris **1**: 94. 1826. — Etymology: spiculum, small

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[49] The second of these references is generally overlooked. I have no information about the exact date of issue.

[50] See under *Gausapia* for this latter specific name.

point. Gender: f. — TYPE SPECIES (selected): *Exidia glandulosa* (Bull.) per Fr. sensu Fr. (Tremellaceae).—For this species, see also under *Exidia.* — SCOPE & TYPIFICATION. One species was fully treated, *Exidia glandulosa* (with *Tremella spiculosa* Pers. as a synonym). It is here considered as the type species. Four other species were mentioned only by name and followed by "etc., de Fries." — REMARK. Chevallier restricted the name *Exidia* Fr. to *Exidia auricula-judae* (Bull. per St.-Am.) Fr., in its original (Bulliardian) sense = *Hirneola auricula-judae* (Bull. per St.-Am.: Fr.) Berk. The rest was placed in his new genus *Spicularia.* — HOMONYM: *Spicularia* Pers. (1822; Moniliales, Deuteromycetes). TYPONYM: *Exidia* Fr. (1822). — STATUS. Impriorable on account of the earlier homonym.

Stilbum Tode *per* Fr., Syst. mycol. **3** (2): 299. 1832. — ETYMOLOGY: *στίλβω,* I shine. Gender: n. — TYPE SPECIES (selected): *Stilbum vulgare* Tode per Fr. (Auriculariaceae). —This species was for a considerable time, and is still sometimes, interpreted as an imperfect fungus (Deuteromycetes). Its assignment to the Auriculariaceae (Stilbaceae) is due to Juel [*in* Bih. svenska VetenskAkad. Handl. **24** III (9): 1-15. 1898[51]]. — DEVALIDATED NAME: *Stilbum* Tode, Fungi mecklenb. **1**: 10. 1790.—Introduced with six species, all illustrated; first species, *Stilbum vulgare* Tode. — SCOPE. Fries included 22 species of which one is *Stilbum vulgare* — TYPIFICATION. The latter species has generally been accepted as the logical type: compare Juel (*l.c.*). — Clements & Shear (Gen. Fungi 407. 1931) suggested "*S. cinnabarinum* Mont." for "*Stilbum* Tode ... 1790; em. Sacc. Michelia **2**: 32. 1880." — REMARK. Early re-publications after the starting-point date are by Mérat, Nouv. Fl. Env. Paris, 2e Ed., **1**: 17. June 1821, with six species, one of which is *S. vulgare;* by S. F. Gray, Nat. Arrang. Brit. Pl. **1**: 563. 1821 ("Persoon"), with three species, the second of which is *Stilbum vulgare;* and by Agardh (Aphor. bot. 80. 1821, name only, "*Stilbum.* Lk."). These uses are to be considered impriorable on account of *Stilbum* Tode per Fr. as published in the starting-point book. — HOMONYM. *Stilbe* Berg. (1767; Verbenaceae) was considered an earlier homonym by O. Kuntze (Rev. Gen. Pl. **2**: 844. 1891) who, therefore, rejected the name. He replaced it by *Botryonipha* Preuss 1852 (type species, *B. alba* Preuss) rather a doubtful fungus pertaining to the imperfect fungi (Deuteromycetes). Apparently *Stilbe* and *Stilbum* are not to be treated as homonyms.

Stypella A. Möll. *in* Bot. Mitth. Tropen **8**: 75, 166. 1895. — ETYMOLOGY: *στύπη,* tow. Gender: f. — TYPE SPECIES (selected): *Stypella papillata* A. Möll. (Tremellaceae). —A re-description was published by Martin (*in* Stud. nat. Hist. Univ. Iowa **16**: 145-146 *f. 1.* 1934), but it is very doubtful whether he really had in hand Möller's fungus. — SCOPE. Introduced with two species, the second being *S. minor* A. Möll. — TYPIFICATION. *Stypella papillata* was suggested as type species by Clements & Shear (Gen. Fungi 342. 1931) and accepted by Martin [*op. cit.* p. 144; **18** (3): 34. 1944; **19** (3): 44. 1952]. It was more fully described (p. 166) than the second which was compared with it. On the other hand it should be remembered that *S. papillata* was already excluded before it was selected and transferred to *Gloeosebacina* Neuhoff. — TYPONYM: *Gloeosebacina* Neuhoff (1924), q.v.

Stypinella J. Schroet. *in* Cohn, Krypt.-Fl. Schles. **3** (1): 383. 1888. — ETYMOLOGY: *στύπη* tow. Gender: f. — TYPE SPECIES (only original species): *Hypochnus purpureus* L. Tul. = *Helicobasidium purpureum* Pat. = *Helicobasidium brebissonii* (Desm.) Donk (cf. pp. 164, 241) (Auriculariaceae). — VARIANT SPELLING: "*Stipinella*"; Migula, Krypt. Fl., Pilze **2** (1): 1. 1912. — TYPONYMS: *Thanatophytum* C. Nees ex S. F. Gray (1821; nomen anamorphosis), *Rhizoctonia* DC. per Fr. (1822, nomen anamorphosis), and *Helicobasidium* Pat. (1885).

Syzygospora G. W. Mart.—See Deuteromycetes. The true basidia show this to belong to the "Thelephoraceae."

Tachafantium.—See *Tachaphantium.*

Tachaphantium Bref., Unters. Gesamtgeb. Mykol. **7**: 78. 1888. — ETYMOLOGY: *τάχα,* quick; *ἄφαντος,* invisible. Gender: n. — TYPE SPECIES (only original species): *Tachaphantium tiliae* Bref. = *Achroomyces disciformis* (Fr.) Donk (Auriculariaceae).—For this species, see also under *Achroomyces.* — VARIANT SPELLING: "*Tachafantium*"; *in* Rev. mycol. **11**:

[51] For an abstract of this paper, see *in* Rev. mycol. **22**: 150-153. 1900.

56. 1889 (as a synonym).—An error. — TYPONYMS: *Platygloea* J. Schroet. (1887), and compare *Achroomyces* Bonord. (1851).

Tjibodasia Holterm., Mykol. Unters. Tropen 44. 1898. — ETYMOLOGY: Tjibodas, a locality on Java. Gender: f. — TYPE SPECIES (only original species): *Tjibodasia pezizoides* Holterm. (Auriculariaceae). — ISONYM: *Collopezis* Clem. (1909), q.v., a superfluous name change.

Tremella Pers. *per* St.-Am., Fl. agen. 535. Apr. 1821; Fr., Syst. mycol. 2 (1): 210. 1822. — ETYMOLOGY: tremo, I tremble. Gender: f. — TYPE SPECIES (selected): *Tremella mesenterica* Pers. (*Tremella mesenteriformis* Jacq.) = *Tremella mesenterica* Retz. per Fr. (Tremellaceae).

HISTORICAL. *Tremella* Dill., Hist. Musc. 41. 1741 is a pre-Linnean name. As originally conceived, this was a genus of algae; only species 15 (*Tremella arborea nigricans, minus pinguis* & *fugax* Dill.), Witches' Butter, is a fungus, and might represent *Exidia glandulosa* (Bull.) per Fr. sensu Fr. — *Tremella* [Dill.] L., Sp. Pl. 1157. 1753; Gen. Pl., Ed. 5, 491. 1754.—Linnaeus introduced Dillenius's name in his binomial system for seven species now distributed over several main-groups: algae, Deuteromycetes, Lichenes, and Basidiomycetes.[52] He not only took the name from Dillenius, but at the same time included two of the latter author's species. Thus the type species of *Tremella* L. should rather be one of these. Both belong to the genus *Nostoc* Vauch. per Born. & Flah. and the selection of one of them would not only be logical, but would also conveniently make *Tremella* L. a devalidated name and synonymous with *Nostoc* ('Nostocaceae heterocysteae'; starting-point date 1886-8): compare Donk (*in* Bull. bot. Gdns Buitenzorg III **18**: 285. 1949). Linnaeus's second species, *Tremella terrestris sinuosa, pinguis* & *fugax* Dill. = *Tremella nostoc* L. = *Nostoc commune* Vauch. per Born. & Flah., is here formally selected for *Tremella* L. This typification would seem to conflict with the residue-method in view of *Linckia* [Mich.] Wiggers (Prim. Fl. holsat. 99. 1780), Roth 1802, a genus to which the species of *Nostoc* were referred and which Wiggers characterized thus: "Substantia gelatinosa, sphaerica aut globosa." However, I believe that the name *Tremella* L. should remain coupled with one of the original species that went with Dillenius's generic name when Linnaeus took the latter up: he attributed it to Dillenius! — Linnaeus's first species, *Tremella juniperina* L. (Uredinales) was considered the type by Arthur (*in* Proc. Indiana Acad. Sci. **1900**: 133-134. 1901) who, moreover, applied *Tremella* L. to *Gymnosporangium* Hedw. f. per DC. (starting-point date, 1801). This act brought into being a genus *Tremella* Arthur 1901 the name of which is antedated by one or two earlier homonyms that had been published previously as will be discussed below.

Tremella Adans., Fam. Pl. **2**: 3. 1763. ("Dill.").—Another use of Dillenius's name was made by Adanson. There is apparently no direct relation at all between his genus and Linnaeus's. Five species were cited, "*Tremella.* Dill. Musc. t. 8. f. 2. / *Byssus.* 1, 2. Dill. Musc. t. 1. / *Conferva.* 4, 5. Dill." The species taken from *Tremella* Dill. (*T. palustris* Weber) is currently identified with *Monostroma bullosum* (Roth) Thuret (Ulvaceae, Chlorophyta; starting-point date, 1753); those taken from *Byssus* are *Byssus flos-aquae* L. = *Aphanizomenon flos-aquae* (L.) Ralfs ('Nostocaceae heterocysteae,' Cyanophyta; starting-point 1886-8) and *B. lactea* L. which I have not been able to trace in modern systematic literature (it may be a fungus); and of those taken from *Conferva,* number 4 has been called *Conferva confragosa* Lightf. 1777 = *C. violacea* Huds. 1778 and identified with *C. alpina* Lyngbye 1819 (= ?; starting-point date?) and number 5 has been completely forgotten. — One would conclude that the obvious type of this generic name is the first species, which would make it a validly published name. However, although Adanson picked out that species as the only one from *Tremella* Dill. and ascribed the generic name to Dillenius, his accompanying generic description excludes it from further consideration: "[*Figure.*] Lame rampante formée de filets cilind. simpl. articulés par des diafragm. & entrelassés. [*Substance.*] Gelatineuse imitant une gloire très-facile à diviser. [*Graines.*] Cilind. formées de chaque articulation des filets." Until a type species has been selected for *Tremella* Adans. nothing can be said about the nomenclaterial status of the name.

[52] The species of Basidiomycetes are *Tremella juniperina* L. = *Gymnosporangium juniperinum* (L.) Mart. (Uredinales), first species; and *Tremella auricula* L. = *Hirneola auricula-judae* (Bull. per St.-Am.: Fr.) Berk., at least in part.

DEVALIDATED NAME: Pers., Syn. Fung. 622. 1801.[53]—It seems in order to postulate a genus *Tremella* Pers. (non L.) rather than one to be called *Tremella* L. sensu Pers. Persoon drastically excluded all algae, inclusive of *Tremella nostoc* as well as all other elements that do not belong to the fungi: if *Tremella* L. is correctly typified by a species of *Nostoc,* then we may also admit a (devalidated) homonym given by Persoon to a genus of fungi. He explicitly excluded the type of *Tremella* L.: "Hoc ex genere excludendas puto omnes species aquaticas, alius utpote naturae forte alia ad genera referendas; cfr. de his Rothii Fl. germ. v. 4. p. 547-353. [!] *Tremella nostoc Ulvae* species videtur."—Persoon (Syn. Fung. 622. 1801). The restriction of the name to fungi only was an important step of high merit at that time. This does not mean that the genus became a natural one: the species are now distributed over such diverse genera as *Exidia* Fr., *Tremella, Dacrymyces* C. Nees per Fr., *Hirneola* Fr. 1848, *Tremiscus* (Pers.) Lév., *Coryne* C. Nees ex S. F. Gray, *Gymnosporangium,* and others. It was this assemblage from which later mycologists started and by a gradual process of purification arrived at the current genus *Tremella!* — Roth at first (Tent. Fl. germ. **1**: 564. 1788; **3**: 547. 1800) kept to the Linnean circumscription, but later he proposed an emendation that, since it excluded the truly aquatic algae (inclusive of *Tremella nostoc* under the generic name *Linckia*) has either to be regarded as an emendation of Persoon's genus (which he mentioned) or as another monadelphous homonym (Roth *in* Neue Beytr. Bot. **1**: 312. 1802; Catal. bot. **3**: 347. 1806). The first of the four species he treated is *Ulva granulata* L. = *Tremella granulata* (L.) Roth = *Botrydium argillaceum* Wallr., an alga growing on mud and now better known as *Botrydium granulatum* (L.) Grev. (Chlorophyta). His other species are *Peziza gelatinosa* Pers. (*Tremella fungiformis* Roth) and *Tremella spiculosa,* both species of *Exidia,* and *T. abietina* Pers., a species of *Dacrymyces.* Roth's first species was stressed by Nees von Esenbeck (Syst. Pilze 155. 1816) who equated *Tremella* of Roth with *Botrydium* Wallr. (1815): "Die Alge, welche Roth, Cat. bot. III. p. 347, unter dem Namen *Tremella* aufzählt, verdient ... einen bezeichnerderen Namen. Das *Botrydium argillaceum* Wallroth ... bezeichnet ... doch eben [*Tremella granulata*] so gut und treffend dass wir [seine neue Gattung] kühn ... an die Stelle der Rothschen Gattung *Tremella* selbst, rücken dürfen." — Fries's first mention of *Tremella* in the starting-point book of the Fungi 'caeteri' is in 1821 (**1**: lv. Jan. 1) where he merely listed a genus "*Tremella.* Roth" as one of the genera of the "Tremellini." There is no description, but Fries put the formula "HMX" after the generic name, "HM" being the formula given to the Tremellini and the 'X' indicating the wood-loving nature of the genus (cf. Fries, *op. cit.* p. xxxviii). It is likely that Fries referred to Roth's later treatment of *Tremella* in 1802 or 1806 rather than to that of 1788 and 1800, and that later treatment had previously been referred to *Botrydium.* If *Tremella* 'Roth' is considered a monadelphous homonym of *Tremella* Pers., then it may be accepted as based on the *Botrydium* element and also that Fries did not validly publish Roth's name as a genus of Fungi. If the 'X' is admitted as a description, then the genus can not be understood except by taking into account Fries's formal treatment of *Tremella* in the next volume of the "Systema." Actually *Tremella* of Fries of 1821 is either a nomen dubium as far as the Fungi are concerned, or a misapplication (exclusive of Roth's 'type') of the name of a genus of algae. "*Tremella.* Roth" (name only) of Agardh (Aphor. bot. 82. Dec. 1821) is the same.

VALID PUBLICATION & SCOPE. One can find several applications of Persoon's fungus name *Tremella* published between January 1, 1821 and Fries's treatment of a genus of that name in the "Systema" [**2** (1). 1822]. It would be convenient if mycologists could agree on a genus *Tremella* Pers. 1801 = *Tremella* St.-Am. 1821 = *Tremella* Fr. 1822 with a species of the current genus as type species. — Perhaps the first to apply the name *Tremella* Pers., DC. (Fl. franç. **2**: 90. 1805), after

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[53] Persoon (*in* Neues Mag. Bot. **1**: 111. 1794 = Tent. 31. 1797) used the name on an earlier occasion (no author's citation), but it is not clear how he delimited the genus. Examples: *Tremella mesenterica, "T. metiorica* (in pratis temp. hyem.)" (= *T. nostoc* ?), and some species currently referred to *Exidia* Fr., *T. sagarum* Retz., *T. arborea* Huds. binomial name for Dillenius's species 15), and *T. glauca* Pers. (description). It is not at all certain that he included any of Linnaeus's algae. — In an observation Persoon calls the species of *Exidia* the typical element ('Species verae').

January 1, 1821 was Saint-Amans (Fl. agen. 535. April 1821). He gave no author's citation and treated "*Nostoc*" as a different genus (inclusive of *T. nostoc*). Among his species are *T. glandulosa* Bull. and *T. mesenteriformis* Jacq. emend. Bull. — Hooker (Fl. scot. **2**: 31. May 1821) also gave no author's citation. Among his species are *T. arborea* (Dillenius's species no. 15) and *T. mesenterica* Pers. (= *T. mesenteriformis* Jacq.). *Tremella nostoc* and *T. verrucosa* will be found in the genus *Nostoc* (p. 74). — Mérat (Nouv. Fl. Env. Paris, 2e Ed., **1**: 28. June 1821) called the genus "*Tremella.* Linnée," but he added the remark: "Les espèces de Linnée, qu'on ne trouve point ici, sont reparties dans les genres *Nostoc, Aegerita, Tubercularia* et *Gymnosporangium.*" — Nocca & Balbis (Fl. ticin. **2**: 347. 1821) had a genus *Tremella* "Bull." of which they recorded only one species, *Tremella auricula-judae* Bull. — Since Saint-Amans (like Hooker and Mérat) published a generic name *Tremella* with the explicit exclusion of the type species of Linnaeus's name, he may be credited with the publication of a fungus genus *Tremella* St.-Am. or *Tremella* Pers. per St.-Am. — Persoon (Mycol. europ. **1**: 98. 1822), and Schweinitz (*in* Schrift. naturf. Ges. Leipzig **1**: 114. 1822) went back to Persoon's treatment of 1801.

S. F. Gray (Nat. Arr. Brit. Pl. **1**: 593. November? 1821) went back to Nees von Esenbeck's treatment of *Tremella* (Syst. Pilze 155-156. 1816 & Ueberbl. 40. 1817). He raised Nees's stirpes to generic rank [*Gyraria* C. Nees ex S. F. Gray, q.v.; *Coryne* C. Nees ex S. F. Gray] and retained the name "*Tremella.* Dillenius" for *Tremella recisa* Ditm. Since he excluded all Linnaeus's original species as well as Dillenius's species no. 15 (which he referred to *Gyraria*) and also excluded all of Persoon's species he may be credited with a genus *Tremella* S. F. Gray (not *Tremella* [Dill.] L., not *Tremella* Pers. per St.-Am.).

Purton (App. Midl. Fl. 509. After September 4, 1821) did not exclude such species as *T. nostoc* and his is the original *Tremella* L.

We now arrive at Fries's full treatment of 1822 in the "Systema" [**2** (1)]. There we find a genus "*Tremella.* Dill." from which he expressly excludes the algae and lichens and a good deal of Persoon's species, inclusive of Dillenius's species 15 (which will be found cited as a synonym of *Exidia glandulosa* Bull. per Fr. sensu Fr.): "*Tremellinae.* ... Ordo praeclare distinctus, sub uno genere cum diversissimis plantas olim confusus. Linné aliique non solum *Tuberculariam, Gymnosporangium* e.s.p.; sed & Lichenes & Algas huc taxerunt. ... Primi Cell. Roth & Persoon tremellas aquaticas, utpote ad Algarum ordinem pertinentes separarunt. ..." (p. 208), "*Tremella.* Dill. ... Histor. ... Ob substantium mollem, tenacem, tremulam nomen imposuit Dillenius, sed sensu latiore sumsit. ..." (p. 211). Three groups were included; the small first section *Hygromitroideae* he soon excluded himself, converting it into *Guepinia* Fr., q.v. The bulk of his species belong to the second and third group ('*Mesenteriformis*' and '*Cerebrinae*'); they are nearly all still kept in the genus *Tremella* of to-day.

Typification. Clements & Shear (Gen. Fungi 342. 1931) suggested *Tremella frondosa* Fr. (not *Tremella frondosa* Roth) as the type species of *Tremella* "(Dill.) Fr. Syst. Myc. **2**: 210. 1823" and this choice has been adopted by Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 52. 1944; **19** (3): 71. 1952] and Donk (*l.c.*). For the modern interpretation of this fungus, see Neuhoff (*in* Schweiz. Z. Pilzk. **11**: 97-100 *pl. 23.* 1933). However, it should be pointed out that this selection conflicts with the residue-method: the species had previously been excluded from the genus and transferred to *Naematelia* Fr. per Fr. by Bonorden (Handb. allg. Mykol. 152. 1851). Moreover, this choice, when maintained, would not tie up *Tremella* Fr. with *Tremella* Pers. 1801 and *Tremella* St.-Am.

Rogers (*in* Farlowia **3**: 483, 1949) accepted *Tremella mesenterica* Pers. for *Tremella* "Pers., Mycol. Eur. **1**: 98. 1822." This selection suits our needs very conveniently if it can be maintained. Gray (*op. cit.* p. 593) included it in *Gyraria,* but it can not be said that he excluded it from Persoon's genus, because he completely divided up that genus into a number of smaller ones and at the same time misapplied the name *Tremella;* he used "*Tremella.* Dillenius" for a single species Persoon referred to *Peziza* L. (erroneously cited by Gray in the synonymy of *Tremella recisa* as *P. "granulosa"* = *P. gelatinosa* Bull.), as already discussed above. — In a confused case like the present one in which nomenclatorial rules and principles are hardly sufficient to restore order it will be difficult to agree upon a final conclusion, but I hope that mycologists will select *T. mesenterica* when they decide to maintain a fungus genus *Tremella.*

Remarks. From what is stated above it will be evident that the introduction of later starting-points has caused a hopeless confusion. It seems defensible to conclude that by the introduction of later starting-points at least the following homonyms came into being:

(i) *Tremella* [Dill.] L. 1753, devalidated name of a genus of 'Nostocaceae heterocysteae' with 1886-8 as the starting-point date.

(ii) *Tremella* Adans. 1763 ("Dill."), name not yet typified, but probably not validly published when a type species is selected for it.

(iii) *Tremella* Pers. 1801, devalidated name of a genus of Fungi 'caeteri' = *Tremella* Pers. per St.-Am. April 1821; Fr. 1822 (in starting-point book), Fungi 'caeteri,' starting-point date, January 1, 1821.

(iv) *Tremella* S. F. Gray November (?) 1821, Fungi 'caeteri.'

(v) *Tremella* Arthur 1901, Uredinales, starting-point date 1801.

Of these, (iv) and (v) drop out in any case as later homonyms of *Tremella* St.-Am. cited under (iii), and (i) and (ii) have never been revalidated or validly published as far as I am aware. This makes *Tremella* Pers. per St.-Am., Fr. a legitimate name, if we do not have to admit a genus (vi) *Tremella* Roth 1802 = *Botrydium* Wallr. (Chlorophyta, starting-point date 1753).

The existence of *Tremella* St.-Am. (if not of still earlier homonyms) makes superfluous a proposal by Rogers (*in* Farlowia **3**: 482. 1949) to conserve "*Tremella* Pers." (1822) against "*Tremella* Dill. ex Gray" and *Gyraria* C. Nees ex S. F. Gray.

It is to be hoped that, if it is conclusively demonstrated that the name *Tremella* is an incorrect one for the fungus genus to which it is now applied, it will be proposed for conservation.

[*Tremellaria* Link *in* C. Nees, Horae phys. berol. 6. 1820, which equals "*Tremella* Linn." (original sense) is the name of a 'Familia' rather than of a genus. Type genus (selected): *Nostochium* Link.]

Tremellastrum Clem.—See "Agaricaceae."

Tremellodendron Atk. *in* J. Mycol. **8**: 106. 1902. — Etymology: the genus *Tremella; δένδρον,* tree. Gender: n. — Type species (selected): *Merisma candidum* Schw. = *Tremellodendron candicans* (Fr.) Donk (Tremellaceae), see page 164. — Scope. Introduced "with ... *Merisma candidum* Schw. ..., *Thelephora Schweinitzii* Pk., [=] *T. pallida* Schw., not *T. pallida* Pers. ... as representative species."—Atkinson (*l.c.*). — Typification. The selection of *Merisma candidum* dates from Burt (*in* Ann. Missouri bot. Gdn **2**: 733. 1915); the same species was also suggested by Clements & Shear (Gen. Fungi 342. 1931) and accepted by Bodman (*in* Amer. Midl. Natur. **27**: 207. 1942) and Martin [*in* Stud. nat. Hist. Univ. Iowa **18** (3): 50. 1944; **19** (3): 67. 1952]. — Isonym: *Collodendron* Clem., q.v., a superfluous name-change. — Variant spelling: "*Tremellodendrum*" Clem. & Shear, Gen. Fungi 342. 1931.—An inadmissable correction.

Tremellodendrum.—See *Tremellodendron.*

Tremellodon (Pers.) Fr., Hym. europ. 618. 1874. — Etymology: the genus *Tremella; ὀδών,* tooth. Gender: m. — Type species (only original species of basinym): *Hydnum gelatinosum* Scop. per Fr. — Basinym: *Hydnum* sect. *Tremellodon* Pers., Mycol. europ. **2**: 172. 1825. — Scope. The genus was established with the same circumscription as that of the basinym, including only one species. — Remark. Donk (*in* Bull. bot. Gdns Buitenzorg III **17**: 180. 1941) proposed the conservation of *Tremellodon* against *Hydnogloea,* q.v., and afterwards added *Pseudohydnum* P. Karst. (non J. Rick) as a second nomen rejiciendum (Donk *in* Bull. bot. Gdns Buitenzorg III **18**: 110. 1949). Although the genus is a small one (one or at most a few species), its type species is so well known, that it has found a well entrenched position in textbooks under the name of *Tremellodon* and conservation seemed indicated. Rogers (*in* Farlowia **3**: 483. 1949) was against the proposal because he considered the genus monotypic and of no particular importance, while Martin (*in* Lloydia **11**: 117. 1948) took up *Pseudohydnum* P. Karst. before a decision was reached. The proposal was rejected by ballot by the Special Committee for Fungi (cf. *in* Taxon **2**: 32. 1953; *in* Mycologia **45**: 321. 1953). — Variant spelling: "*Tremellodus*"; *in* Rev. mycol. **11**: 55. 1889 (incidental mention).—Evidently an error. — Typonyms: *Echin-agaricus* Haller (1742; pre-Linnean name), *Pseudohydnum* P. Karst. (1868), and *Hydnogloea* Currey apud Berk. & Br. (1871).

Tremellodendropsis (Corner) D. A. Crawf. *in* Trans. roy. Soc. N. Zeal. **82**: 618. 1954. —

Etymology: the genus *Tremellodendron;* ὄψις, appearance. Gender: f. — Type species (by original designation): *Thelephora tuberosa* (Grev.) Fr. (Tremellaceae). — Basinym: *Aphelaria* subgen. *Tremellodendropsis* Corner *in* Ann. Bot. II **17**: 348. 1953.—Introduced with four species; type by original designation, *Thelephora tuberosa.* — Remark. The species has been included in the Clavariaceae, but, perhaps, it should be transferred to the Tremellaceae.

Tremellodus.—See *Tremellodon.*

Tremellopsis Pat.—See "Agaricaceae."

Tremiscus (Pers.) Lév. *in* Orb., Dict. Univ. Hist. nat. **8**: 487. 1846; Consid. mycol. 108. 1846. — Etymology: tremisco, I tremble. — Type species (selected for basinym): *Tremella rufa* Jacq. = *Tremiscus helvelloides* (DC. per Pers.: Fr.) Donk (Tremellaceae), see page 164. — Basinym: *Tremella* sect. *Tremiscus* Pers., Mycol. europ. **1**: 103. 1822. —Persoon included two species, *Tremella fimbriata* Pers. [per Pers.: Fr.] (first species) and *T. rufa.* Of the latter he remarked, "Species singularis forte sui generis ...." — Valid publication. The present generic name is somewhat doubtfully validly published: Léveillé mentioned it as a genus of his "Tremellés" merely as "*Tremiscus,* Pers."[54]; compare Rogers (*in* Farlowia **3**: 445. 1949). However, in my opinion, the present Code allows us to consider the author's citation 'Pers.' as a valid reference to Persoon's description of *Tremella* sect. *Tremiscus.* — Typification. Persoon's observation under *Tremella rufa,* partly quoted above, may have induced Léveillé to raise the group to generic rank, and hence that species might be considered the type. On the other hand, one could argue that Persoon founded his subdivision *Tremiscus* for *Tremella fimbriata* and that he entered *Tremella rufa* as a highly aberrant type in this group. I consider this latter interpretation of the facts as incorrect, because Persoon's subdivisional description, "erecta dimidiata, subauriculata," positively does not agree with his description of *T. fimbriata* ("... suberecta ..."), but matches well that of *T. rufa* ("... erecta dimidiato-infundibuliformis ... adultiones subauriculatae ...")! Lloyd (Mycol. Writ. **7**: 1143. 1922) had already come to a similar conclusion; he said under *Gyrocephalus rufus* [= "*Guepinia*" *helvelloides* (DC. per Pers.: Fr.) Fr.]. "If somebody wanted to be accurate and get it correct, he should call the plant "*Tremiscus rufus* (Jacquin) Pers."[55] Therefore, I cannot follow Rogers (*l.c.*), who selected *T. fimbriata* "in order to avoid complications," and I herewith select *T. rufa* as the type species of the basinym and of Léveillé's generic name. — Typonyms: *Guepinia* Fr. (1825; preoccupied) and *Phlogiotis* Quél. (1886). And compare *Hepataria* Rafin. (1808; not validly published).

[*Trichoceridium* R. Poisson *in* Ann. Paras. humaine comp. **10**: 435. 1932. — Type species (only original species): *Trichoceridium ramosum* R. Poisson, a fungus found attached to the rectum wall of larvae of *Trichocera sp.* — The author classed it among the Fungi imperfect, but Sartory (Champ. paras Homme Anim. 1936; *n.v.*) regarded it as belonging to the Protobasidiomycetes. The original account does not warrant such a disposition.]

Tulasnella J. Schroet.—See "Thelephoraceae."

Ulocolla Bref., Unters. Gesamtgeb. Mykol. **7**: 95. 1888. — Etymology: οὖλος, crisped; κόλλα, glue. Gender: f. — Type species (selected): *Exidia saccharina* Fr. (Tremellaceae). — Scope. Introduced with two species: *Exidia saccharina* and "*Ulocolla foliacea* nov. sp."[56] It is now often accepted that both original species (in Brefeld's sense) are conspecific. — Typification. The first

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[54] In the same manner the generic name was published many years afterwards by Sicard (Hist. nat. Champ. 20. 1883). Montagne (*in* Orb., Dict. univ. Hist. nat. **12**: 641. 1848) mentioned the name merely as a matter of record.

[55] Persoon did not make this combination; in fact, as far as I am aware, it has not yet been validly published.

[56] Brefeld continued, "Diese Form ist identisch mit der alten *Tremella foliacea,* die als solche zu existiren aufhören muss." In a previous publication he called the fungus *Tremella foliacea,* which apparently should be taken as a misapplication of *Tremella foliacea* (Pers. per S. F. Gray) Fr. And compare, "... ebenso wurde *Tremella foliacea* zur neuen Gattung „*Ulocolla*" erhoben" (p. 108).

species, which was more fully described than the second, is here selected; it has already been suggested by Clements & Shear (Gen. Fungi 342. 1931). — VARIANT SPELLING: "*Olocolla*"; Heim *in* Rev. Mycol. **14** (Suppl. col. 1): 6. 1949.—Evidently an unintentional error.

Uredinella Couch *in* Mycologia **29**: 665. 1937. — ETYMOLOGY: diminutive of *Uredo*. Gender: f. — TYPE SPECIES (only original species): *Uredinella coccidiophaga* Couch (Septobasidiaceae).

Xenogloea H. & P. Syd. *in* Ann. mycol. **17**: 44. 1919. — ETYMOLOGY: *ξένος*, strange; *γλοιός*, any sticky substance. Gender: f. — TYPE SPECIES (only original species of basinym): *Kriegeria eriophori* Bres. (Auriculariaceae). — BASINYM: *Kriegeria* Bres. (1891), q.v. — REMARK. A name change, the basinym being considered preoccupied, incorrectly so in my opinion.

Xenolachne D. P. Rog. *in* Mycologia **39**: 561. 1947. — ETYMOLOGY: *ξένος*, strange; *λάχνη*, down or fuzz. Gender: f. — TYPE SPECIES (by original designation and only original species): *Xenolachne flagellifera* D. P. Rog. (Tremellaceae).

[*Xylissus* Rafin. *in* Medic. Repos., New York, 2d Hex., **5**: 356. 1808; *in* J. Bot. (réd. Soc. Bot.), Paris **2**: 177. 1809 (French translation). — Described as a "sort of *Mucor* upon wood, of which the peridium becomes a mass of seeds at maturity." Three species: *X. cylindraceus* Rafin., *X. lineatus* Rafin., and *X. oblongus* Rafin., all nomina nuda. The name was listed as a doubtful synonym of *Dacry(o)myces* Nees by Endlicher (Gen. Pl. 34. 1836; Ench. bot. 20. 1841). This can not be correct. It is much more likely that these fungi represent myxomycetes[57]: compare the specific epithets! In any case a nomen dubium. — In case one wants to regard the genus as belonging to the 'Fungi caeteri' (starting-point date, 1821), the name was not validly published, in my opinion, when Reichenbach (Consp. Regni veg. 15. 1828) listed it as "*Xylissus*. Rafin. (Mucoroid.?)." The reasons for this conclusion are the same as those stated for *Hepataria* (see the present paper, p. 201).]

Zonaria Roussel, Fl. Calvad., 2e Ed., 99. 1806 (devalidated name). — Type species (selected): "Zôn[aire] violette" = *Auricularia tremelloides* var. *violacea* Bull. — The genus was introduced with three species (?) each representing one of Bulliard's varieties of *Auricularia tremelloides* Bull. = *A. mesenterica* (Dicks. per S. F. Gray: Fr.) Fr. (Auriculariaceae). I select the first as the type species. The indication of the non-original *Dictyota variegata* Lamour. by Doty (*in* Lloydia **13**: 24, 25. 1950) has already been critizised and rejected by Silva (*in* Univ. Calif. Publ. Bot. **25**: 273. 1952). — Homonyms: *Zonaria* Drap. per Web. & Mohr (1805; Dictyotaceae, Phaeophyta) and *Zonaria* C. Ag. (1817; nomen conservandum; Dictyotaceae, Phaeophyta): cf. Code 205. 1956 and Silva (*op. cit.* pp. 272-277). — Typonyms: *Agaricogelicidium* Paul. (1793; devalidated name), *Oncomyces* Klotzsch (1843), and *Patila* Adans. per O.K. (1891).

ACKNOWLEDGEMENT

I am much indebted to Dr. G. W. Martin, State University of Iowa, U.S.A., for reading the manuscript and for annotations made on that occasion.

ADDENDUM

Dermatangium Velen. *in* Mykologia, Praha **3**: 42. 1926. — ETYMOLOGY: *δέρμα*, skin; *ἀγγεῖον*, urn. Gender: n. — TYPE SPECIES (only original species): *Dermatangium laevisporum* Velen. (Tremellaceae).—According to Vacek (*apud* Pilát, Velen. Sp. nov. Bas. 287. 1948) and Pilát [*in* Acta Mus. nat. Pragae **13** B (4): 180. 1957] this species belongs to *Tremella steidleri* (Bres.) Bourd. & G. — REMARKS. Descriptio generico-specifica. — Velenovský placed the genus in the Gastromycetes.

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[57] Starting-point date, 1753.

NEWS AND NOTES

INDEX NOMINUM ALGARUM AND BIBLIOGRAPHIA PHYCOLOGICA UNIVERSALIS

The National Science Foundation (Washington) is financing a two-year project aimed at obtaining information toward the preparation of an index of scientific names of algae. The project, under the direction of P. C. Silva, University of Illinois, assisted by D. E. G. Irvine, formerly of Cambridge University, has a dual purpose: primarily to serve as a pilot-plant operation in order to determine the magnitude of the task of preparing such an index and the methods which should be employed; secondarily to contribute directly to the index by the preparation of entry cards.

Until about 1830 it was possible to encompass all known plants in a single comprehensive treatment; hence, an index to the treatment served also as an index to all plant names. After 1830 the number of known plants became so large as to make such treatments impracticable. Indices to major divisions of the plant kingdom eventually were prepared. The last comprehensive treatment of algae was G. B. De Toni's Sylloge Algarum (1889-1907; 1924). Within the algae the diatoms were indexed by F. W. Mills (An Index to the Genera and Species of the Diatomaceae . . . 1933-1934) and the desmids by C. F. O. Nordstedt (Index Desmidiacearum . . . 1896, 1908). There still does not exist a comprehensive index of the algae, and the vast literature that has appeared since the publication of De Toni's Sylloge Algarum has created an acute need for such a bibliographic tool.

Some of the questions which it is hoped will be answered during the course of this project deal with the existence, location, and availability of bibliographic sources; procedures of scanning literature and of preparing and filing entry cards; data to be included in the index; and the format of publication.

A by-product of the preparation of an index to scientific names, the importance of which might exceed that of the index itself, would be the compilation of a comprehensive phycological bibliography. Inasmuch as all potential sources of phycological literature must be scanned for the nomenclatural index, the concomitant preparation of a topical index could be undertaken with relatively small additional investment of time and labor.

Many problems of the Index and Bibliography have already been solved by Dr. Silva during the past nine years of preliminary work. Suggestions from phycologists, especially as to the data that they think should be included in the index and as to the format of publication, will be appreciated.

NATIONAL SCIENCE FOUNDATION

Dr. David D. Keck, Assistant Director and Head Curator of the New York Botanical Garden has been appointed Program Director for Systematic Biology of the National Science Foundation of the United States, effective 6 October 1958. Dr. Keck is successor to Dr. Albert C. Smith who has been appointed Director of the Museum of Natural History of the United States National Museum.

Before coming to the New York Botanical Garden, in the early part of this decade, Dr. Keck was associated with the Carnegie Institution of Washington, Department of Plant Biology at Stanford University, Stanford, California, U.S.A. At this institution he was engaged with J. Clausen and W. M. Hiesey in their classic series of "Experimental studies on the nature of species". Dr. Keck is furthermore known for his taxonomic work in *Compositae* (*Madiinae, Artemisia*), *Poa* and *Penstemon*. He collected extensively in the western United States.

SMITHSONIAN INSTITUTION, WASHINGTON DC.

The appointment has been announced of Dr. Albert C. Smith as the Director of the Museum of Natural History of the United States National Museum, effective 6 October 1958. Dr. Smith has been program director for systematic biology with the National Science Foundation of the United States. Prior to this affiliation with the National Science Foundation, Dr. Smith was, for 8 years, Curator of the Division of Phanerogams in the Department of Botany of the Smithsonian Institution. He now returns to this Institution to direct the bureau which includes the Departments of Anthropology, Zoology, Botany, and Geology. In addition to directing the activities of the Museum of Natural History, he will continue his scientific work in phanerogams.

Dr. SMITH was born in Springfield, Massachusetts (1906). He received his Ph. D. in 1933 from Columbia University in New York City. Thereafter he was associated with the New York Botanical Garden and the Arnold Arboretum of Harvard University. In addition to study and research in England, France, Switzerland, Germany, Holland, and the Scandinavian countries, he has participated in several botanical expeditions to Colombia, Peru, Brazil, Fiji, British Guiana, and the Lesser Antilles. He is a member of the Editorial Committee and the Committee for Spermatophyta of the I.A.P.T.

PERSONALIA

E. YALE DAWSON, formerly of the Allan Hancock Foundation, has become director of research at the newly established Beaudette Foundation for Biological Research at Solvang, near Santa Barbara, California. He will continue taxonomic studies of benthic marine algae of the eastern Pacific.

DR. DWIGHT M. MOORE from the Arkansas A. & M. College will be visiting professor of botany at the University of Saigon, Vietnam, from September 1, 1958 to June, 1959.

M. ANDRÉ AUBRÉVILLE has been appointed Director of the Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, Paris.

The death is announced at the age of 64 of RALPH A. VAN METER, president emeritus of the University of Massachusetts, professor of pomology for 25 years (26 July 1958).

MARCUS M. RHOADES, professor of botany and cytogenetics at the University of Illinois has recently succeeded RALPH E. CLELAND as head of the Department of Botany, Indiana University, (September 1958). R. E. CLELAND has reached the compulsory retirement age for department heads and is now devoting his time to teaching and research.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.

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NOMENCLATURE PROPOSALS FOR THE MONTREAL CONGRESS

XIV. PROPOSALS BY G. M. SCHULZE and G. BUCHHEIM (Berlin-Dahlem)

120. *Preamble, par. 6.* Proposed rewording: "The provisions regulating the method of modification of this Code form its last division."

Comments: The proposed wording is in accordance with the title of Division III, see p. 51.

120a. *Article 10, Note.* To read: "For plants of which it is impossible to preserve a type specimen, or for a species or a taxon below the rank of species without a type specimen, the type may be a description or figure."

Comments: By the present wording this provision applies only to species and not to infraspecific taxa. We cannot see any reason for such a restriction. (In the wording proposed above, we have inserted intentionally "taxon below the rank of species" instead of "infraspecific taxa" since the term "infraspecific taxa" is not introduced into the Code until p. 24, Title of Chapt. III of Section 6).

120b. *Recommendation 29A:* To delete "in ephemeral publications".

Comments: Such publications are already contained in the last par. of Art. 29 (tradesmen's catalogues, non-scientific newspapers).

120c. *Article 40, line 2 and Note 2:* The definition of the term "nothomorph" differs from that in Art. H. 5.

In Art. H. 5, Note one will read "... any hybrid form, whether ...", in Art. 40, Note 2 "... any taxon of hybrid origin, whether ...", in Art. 40, line 1, 2 "... hybrids (any nothomorphs)".

It is proposed that the Committee for Cultivated Plants should re-examine the definitions in order to supply a suitable wording.

121. *Article 41, Examples.* It is proposed that the order of the two examples be reversed, since the *Philgamia* example refers to (2) and the *Strophioblachia* example to (1).

122. *Article 55, Example f.* The last part of the sentence to read: "The citation in parentheses (under Art. 49) of Bongard indicates the original author using the epithet in a name based on a type different from that of *Tsuga heterophylla*."

Comment: We think that this wording really makes clearer what is meant.

123. *Article 59:* It is proposed that the Committee for Fungi and Lichens should reconsider the wording of this Article with especial regard to the use of "state" and "stage" in the third sentence.

124. *Article 59:* Last line of the first par. to replace "transfer" by "new combination".

Comment: We think that only a taxon can be transferred to another taxon or an epithet to another name (e.g. generic name).

125. *Article 73, par. 1.* To read:

a) "The original spelling of a name or epithet must be retained, except that typographic or orthographic errors may be corrected."

Or alternative wording:

b) "The original spelling of a name or

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epithet must be retained, but corrections of typographic or orthographic errors are permitted."

Comment: The present wording of the second part of par. 1 is that of a Recommendation but not of an Article by using the word "should".

126. *Article 73, Note 3.* To read: "The wrong use of the terminations which are dealt with in Rec. 73C (a, b, d) is treated as an orthographic error."

Comments: The present wording of Note 3 is rather strange in its use of the phrase "and the reverse errors". Where is it stated that, e.g., the use of *i* (etc.) instead of *ii* (etc.) is an "error"? And if it were an error we cannot say that an error is "treated" as an error: an error is an error! Rec. 73C (a, b, d) deals only with the proper use of terminations. If *i* instead of *ii* is used under Rec. 73C (b) this may be an "error" or an intentional use. Whether it is an error or an intentional use, under Rec. 73C (b) it is what we would normally call a "mistake". What we can do is only to treat "the wrong use of terminations" as an orthographic error.

The proposed wording is in parallel with that of Note 2, in the text of which also no special provisions are contained.

127. *Article 73, Examples of typographic errors and Examples of orthographic errors.* Alternative proposal:

a) To combine both groups of Examples under the heading "Examples of typographic or orthographic errors".

b) To establish a special paragraph with the heading "Example of both a typographic and an orthographic error: *Rosa pissarti* Carr. (Rev. Hort. 1880: 314) is a typographic error for *R. pissardi* (see Rev. Hort. 1881: 190) which may be corrected to *R. pissardii* (see Rec. 73C, b)".

Comments: In several cases, it is difficult or impossible to decide whether there is a typographic or an orthographic error. If proposal (a) cannot be accepted, proposal (b) should be taken into consideration, since the *Rosa* example is an example of both a typographic and an orthographic error.

Both the placing of the *Rosa* example under "Examples of typographic errors" in Art. 82, Code (1952, p. 44) and the wording was correct, since nothing was said about the correction of *R. pissardi* to *R. pissardii.*

From the wording of the *Rosa* example in the Code (1956) it looks as if in Rev. Hort. 1881. 190 *R. pissarti* was corrected to *R. pissardii,* but in Rev. Hort. 1881. 190 it is only stated that *R. pissarti* is a typographic error and is to be changed to *R. pissardi.* The correction of *R. pissardi* is only in accordance with Art. 73, Note 3.

128. *Article 73, Examples of typographic errors.* To read: "*Globba brachycarpa* Baker (in . . .) and *Hetaeria alba* Ridley (Journ. . . .) are typographic errors, the correct names being *Globba trachycarpa* Baker and *Hetaeria alta* Ridley respectively (see Journ. . . .)."

For argument see above under proposal no. 125.

129. *Article 73, Examples of orthographic errors:* To replace in lines 4, 7, 9, 13 (twice) "should" by "may".

For argument see under proposal no. 125.

130. *Recommendation 73C (d).* To read: "When an epithet taken from the name of a man is used as an adjective, it is formed in the following manner: (1) when the name of the person ends in a vowel, *anus* (*a,um*) is added (thus *clarkeanus* after Clarke; *koidzumianus* after Koidzumi; *berteroanus* after Bertero), except when the name ends in *a,* when *eanus* (*a,um*) is added; (2) when the name ends in a consonant, *ianus* (*a,um*) is added (e.g. *dielsianus* after Diels), except when the name ends in *-er,* when *anus* (*a,um*) is added (*hassleranus* after Hassler)."

Comments: We are not sure if it is correct to add *eanus,* when the name ends in *a,* e.g. *saportaeanus* from Saporta. We do not know an existing example, where this procedure has been followed. *Centaurea riaeana* (Reichb. f.) Sennen does not count, since Reichenbach does not ascribe this taxon to a man called "Ria", but to a man called "Durieu".

In Ind. Kew. Suppl. X, 1936-1940, there are to be found the names:

Asarum Hayatanum Maekawa (after Hayata), *Bulbophyllum Hatusimanum* Tuyama (after Hatusima), *Calamagrostis Hiyamana* Hondo (after Hiyamana), *Cardamine Matsumurana* Nemoto (after Matsumura), *Cordia Mexiana* Johnston (after Mexia), *Cynanchum Matsudanum* Koidzumi (after Matsuda).

We should like to know if these epithets are formed in a correct manner.

In Art. 73, Note 3, the terminations *anus* and *ianus* are mentioned; besides there is also a reference to Rec. 73C (d), but in (d) nothing is said about the use of these terminations. It would be advantageous and desirable to state explicitly the proper use of the terminations concerned.

131. *Appendix I, Article H. 1, par. 2.* The first sentence to read: "The formula consists of the names or of the specific epithets of the two parents in alphabetical order connected by the multiplication sign."

132. (*idem*). The *Salix* example to read: "*Salix* × *capreola* = (*Salix aurita* × *caprea*).

Comments: It is stated in Art. H. 1 that for hybrids or putative hybrids between two species of the same genus "The formula consists of the specific epithets of the two parents in alphabetical order connected by the multiplication sign". But in the Examples to this Article the formula consists of the names of the parents, not of the epithets of the parents. According to the text the Examples should have read:

Digitalis lutea ♀ × *purpurea* ♂; *Salix* × *capreola* (= *Salix aurita* × *caprea*). In fact, both forms of designating interspecific hybrids of the same genus (e.g. *Salix aurita* × *S. caprea*; *Salix aurita* × *caprea*) are in general use in botanical literature, also in agricultural, horticultural and silvicultural literature.

133. *Appendix I, Article H. 1, Note 2, Examples.* The second example to read: "The designation *Potentilla tormentillo-formosa* published by Maund is considered as a formula *Potentilla formosa* × *Tormentilla reptans.*"

Comments: See Intern. Code of Nomencl. for Cult. Plants, London 1953, p. 24, Art. C. 26 (I.C.B.N. Art. H. 1, Note 2, Examples).

The *Potentilla* example is intended to refer to "consisting of the specific epithet of one parent combined with the generic name of the other" (Note 2).

134. *Appendix I, Article H. 2.* The second sentence to read: "In the formula the order of the names or epithets and the use ..... should follow the procedure set down in Art. H. 1."

For arguments: see above under proposal no. 132.

135. *Appendix I, Recommendation H. 5A:* To delete "or the symbol ℄"

Comment: This symbol is really superfluous and has already been removed in the new 1958 edition of the Intern. Code of Nomencl. for Cult. Plants.

136.-138. *Article 17, On the nomenclature of orders.* Strict application of Art. 17 in connection with Art. 16 involves many difficulties. According to Art. 17, the name of an order is taken from that of its type family.

a) The correct names of families and consequently of many type families of orders are not yet fixed. By change of the name of a type family of an order the name of that order often has to be changed. There is no provision that a name of an order may be taken from a synonym of the name of the type family.

b) Apart from the fact that many names of orders not taken from the name of a family (e.g. *Helobiae, Farinosae, Scitamineae, Centrospermae,* etc.) are not in accordance with Art. 17 and have to be changed, several well known and widely used names taken from the name of a family and ending in *-ales* are illegitimate and have to be replaced by other names (e.g. *Magnoliales* by *Annonales, Sarraceniales* by *Nepenthales, Sapindales* by *Acerales, Celastrales* by *Coriariales,* etc.).

It is proposed that:

136. *Article 17, first par.,* read: "The name of an order is taken from that of its type family or a synonym of this name, even if illegitimate, and has the ending *-ales.*"

137. The following be added to the examples of names of orders:

"*Opuntiales,* from *Opuntiaceae* A. Juss., a synonym of *Cactaceae* A. L. Juss."

138. A provision giving the possibility of conserving names of orders be inserted.

139. *Appendix II:* To insert in parentheses between the titles "Special provisions concerning fossil plants" and "1. General Principles": "(See also Preamble, par. 7; Art. 7, Note 5; Rec. 8 D; Art. 13 j; Art. 36, par. 1; Art. 58; App. IV, 6. and 7.)"

Comments: A reference to these provisions dealing with fossil plants would be of advantage to paleobotanists. Experience has shown that these provisions are likely to be overlooked.

140. Proposal for a better arrangement of Arts. PB. 1-PB. 6: (Former Article-number first) PB. 2 = PB. 1; PB. 1 = PB. 2 (amended in accordance with prop. 141); PB. 3 = PB. 3; PB. 6 = PB. 4; Art. 36, par. 1 = PB. 5 (amended in accordance with prop. 142); PB. 4 = PB. 6; PB. 5 = PB. 7 (amended in accordance with prop. 143); Rec. PB. 6A-PB. 6F = Rec. PB. 7A-PB. 7F.

Comments: Art. PB. 2 is the basic rule for the nomenclature of fossil plants; therefore Appendix II should start with this Article.

Arts. PB. 3, PB. 6 and Art. 36, par. 1 deal with conditions and dates of valid publication; Arts. PB. 4 and PB. 5 deal with typification.

We are very much in favour of a reprint of Art. 36, par. 1 in this Appendix; this Article is really a *special* provision for fossil plants.

141. *Article PB. 1* (proposed PB. 2), first sentence, to read: "Since species, and consequently many of the higher taxa of fossil plants are usually based on specimens of detached organs ....."

Comments: Organ-genera and form-genera are not distinguished as taxa by the fact that the *names* of the species are based on specimens of detached organs, but on the fact that the species are based on specimens of detached organs.

142. *Article 36, par. 1* (and proposed Art. PB. 5) to read: "A name of a new taxon of fossil plants *of specific or lower rank* ....."

Comments: This provision apparently refers only to the names of new taxa of fossil plants of the rank of species or below. It is impossible to give an illustration or figure for such taxa as genus, family, order, etc. (See Art. PB. 3 where for such cases no illustrations are required; see also Art. 36, par. 2 concerning Algae where there is a correspondent situation; here you will find the wording "of specific or lower rank".

143. *Article PB. 5* (proposed Art. PB. 7), first sentence to read: "When diagnostic characters are altered or circumscription changed in taxa of fossil plants *of specific or lower rank,* the type ....."

Comment: Specimens can be only types of taxa of the rank of species or below.

144. To insert as first sentence of *Rec. PB. 6A* (proposed PB. 7A): "An author describing a new genus of fossil plants should indicate whether it is a genus, organ-genus or form-genus.

An author describing organ-genera ..... established.

It is desirable ..... *theca,* etc.)."

Comments: This addition would be advisable and very useful in order to avoid later doubts about the nature of the genus concerned. This proposal is based on a suggestion in a letter from Dr. W. Krutzsch, Berlin-Pankow.

145. *Article 7, Note 5* and *Appendix IV, 7.* to read: "The typification of *both organ-genera and form-genera based either on plant macrofossils or plant microfossils,* of genera of imperfect fungi ....."

Comments: The present wording of Art. 7, Note 5 and App. IV, 7. looks as if "genera based on plant microfossils" belong to a category of genera different from form- and organ-genera. But German paleobotanists, e.g. Kräusel, Potonié, Weyland, are of the opinion that plant microfossils may be assigned either to form- or to organ-genera.

XV. PROPOSALS BY LENNART HOLM (Uppsala)

145a. *Article 11:* In lines 6 and 9, delete the words "validly published".

Comment: A legitimate name is always validly published.

146. *Article 20:* The following alteration is proposed: The name of a genus is a substantive in the singular number, or a word treated as such. It may be taken ..... arbitrary manner.

Comment: Names like *Aa* or *Ifloga,* which in themselves are only meaningless combinations of letters, hardly belong to any part of speech whatever.

147. *Article 32:* In the first sentence, delete the words "recent plants".

Comment: It is a curious fact that the present Code does not contain a general rule that even names of fossil plants must be accompanied by a description in order to be validly published. Art. 36 states indirectly, that this is required for names published on

or after 1 Jan. 1912. Art. PB. 3 does not make things better, for from it one gets the impression indeed that *nomina generica nuda*, published before 1 Jan. 1953, are validly published!

148. *Article 45:* In the second paragraph, delete the words "published in legitimate combinations".

Comment: The present wording seems irreconcilable with Art. 70, Note 3.

149. *Article 68:* Add (5): When they coincide with names of taxa of higher rank. Example: *Myxomycetes* Renault, Fl. Foss. Autun et Épinac 2: 422. 1896.

Comment: Generic names like *Algae* or *Rosaceae* are certainly not desirable.

150. *Article 69:* Delete Note 1.

Comment: The Note does not seem reconcilable with Art. 70, Note 3.

XVI. NOMENCLATURE PROPOSALS BY BRITISH BOTANISTS

The series of amendments to the Code proposed below have been discussed and generally approved at a series of informal meetings of British botanists before being submitted for publication by their authors. Those present at one or more of the meetings were: J. P. M. Brenan; A. A. Bullock; J. E. Dandy; F. C. Deighton; J. S. L. Gilmour; I. C. Hedge; A. C. Hoyle; C. E. Hubbard; J. Lewis; R. Ross; N. Y. Sandwith; W. T. Stearn; E. F. Warburg.

They are not necessarily all in complete agreement with every detail of what is proposed, but no serious objections to any of it have been raised, except where noted.

Those responsible for the individual proposals wish to record their thanks to their colleagues for their suggestions, which have led to many improvements.

PRINCIPLES (A. A. Bullock)

The wording of Principles III and V could be improved, and the following new versions are put forward:

151. *Principle no. III* to read: "The correct name of a taxonomic group is determined by priority of publication."

152. *Principle no. V* to read: "Scientific names of plants are treated as Latin even if they are taken wholly or partly from other languages or are without meaning."

TYPIFICATION (A. A. Bullock and R. Ross).

Chapter 2, Section 2 of the Code contains a number of anomalies and ambiguities and we have, by rearrangement, rewriting and additions, endeavoured to remove most of these. Article 7 has been extended to include Article 8, and Articles 9 and 10 have been reversed and largely rewritten. More complete and, we think, more accurate definitions of terms have been incorporated in Article 7 and the anomaly of the expression "neotype" has been removed because we consider it to be a somewhat useless concept entirely subject to taxonomic opinion. A new term "protologue" is introduced and is intended to include all the evidence adduced by the original author of a new name, whether it be in the form of description, statement of distribution or other annotations, all of which must be taken into account in the selection of lectotypes.

153. *Article 7* refers to a particular element of a taxon which constitutes the type, but it is not defined. We therefore suggest the following addition:

"It is the element or one of the elements upon which the description (and/or illustration) giving the name valid publication (see Art. 32-45) is based."

154. We regard *Note 3* of *Article 7* as inaccurate and ambiguous, and suggest that it should be rewritten as follows:

"Note 3. If no holotype was indicated by the author who described a taxon, a lectotype as a substitute for it may be designated. When a syntype or paratype exists the lectotype must be chosen from one of these. If the holotype is lost or destroyed, an isotype, if such exists, must be chosen, or failing this, a paratype.

"A lectotype (*lectotypus*) is either (a) a specimen or other element selected from the original material available to the describer of a taxon (whether cited in the protologue or not) up to the time of publication of the name concerned, when no holotype was

designated, or (b) a duplicate [1]) of the holotype when the latter is lost or destroyed. When two or more specimens have been designated as "types" by the author of a specific or infra-specific name (e.g. male and female, flowering and fruiting, etc.) one of them must be chosen as lectotype."

155. The word neotype was defined in *Article 7, Note 3* but we find that this is an unnecessary complication, since in the absence of a holotype, the lectotype must be represented by either another specimen used by the author or by the description and/or illustration as indicated in the note to Art. 10. We therefore propose the deletion of the paragraph beginning "*A neotype* is a specimen ...."

It is naturally expected that any monographer will indicate a specimen or specimens which he regards as a good standard of reference for any particular name, but such choices are entirely subject to taxonomic opinion.

156. Add further to *Article 7, Note 3*, the definitions of isotype, paratype and syntype, at present incorporated in Art. 8, Rec. 8A, with modifications as follows:

"An isotype (*isotypus*) is a duplicate of the holotype; it is always a specimen, and may become a lectotype when the holotype is lost or destroyed."

"A syntype (*syntypus*) is any one of the two or more specimens or other elements cited or indicated in the protologue when the author failed to designate a holotype, or when two or more specimens or other elements were simultaneously designated as types.

"The choice of a lectotype may be superseded only if it can be shown that it was based upon a misinterpretation of the protologue [2]), or if the holotype is rediscovered."

157. The typification of superfluous names has always been a source of argument and difficulty; we propose, therefore, an addition to *Article 7, Note 4* which will clarify the procedure intended by the Code:

"The type of a name or epithet which was nomenclaturally superfluous when published (see Art. 64(1)) is the type of the name or epithet which ought to have been adopted under the Code."

158. Some difficulties have been experienced in the interpretation of the Code relative to typification in groups for which starting points later than 1753 have been agreed. We propose a clarification here by the addition to *Article 7* of a *new Note:*

"Note 6. For those groups with nomenclatural starting points later than 1753 (see Art. 13) the type is to be determined by the protologue given by the author validly publishing (see Art. 32-45) the name, or when valid publication is by reference to a prestarting point protologue, the latter must be used as though newly published."

It is realized that this proposal conflicts with that given by Donk in Taxon 6: 245-256. 1957.

In order to complete the incorporation of Art. 8 into Art. 7, the following transfers are necessary:

159. *Recommendation 8B* to become *Recommendation 7B.*

160. *Recommendation 8C* to become *Recommendation 7C,* and in line 1 for "type material" read "original material". This is a form of words designed to remove an ambiguity. "Type material" may be thought to mean the specimens used by the author, though in fact there may be no specimens available to him and his "original material" may have consisted only of earlier published material (letter-press and figures).

161. *Recommendation 8D* to become *Recommendation 7D.*

162. *Recommendation 8E* has led to some controversy. It is clear that the force of the

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[1]) The word duplicate is here given its usual meaning in herbarium curatorial practice. It is part of a single gathering made by a collector at one time.

[2]) Protologue (from πρῶτος, first, λόγος, discourse) "the printed matter accompanying the first publication of the name [or epithet]" (Wilmott MS.); this term was proposed by A. J. Wilmott (1888-1950) to cover everything associated with a name at its first publication, i.e. diagnosis, description, references, synonymy, geographical data, citation of specimens, discussion, comments, illustration. — See Stearn, Intr. Linn. Sp. Pl. Facs. Ed. Ray Soc. 126, *adnot.* 1957.

use of *nomina conservanda* will be impaired unless the listed type-species are maintained; it is proposed therefore, that Rec. 8E should become *Note 7* to *Article 7*, and amended to read:

"The listed type-species of a conserved generic name (see Art. 14 and App. III) may be changed only by a procedure similar to that adopted for the conservation of generic names."

"Example. In the interests of stability and taxonomic accuracy Bullock and Killick (Taxon 6: 239. 1957) proposed that the type species of *Plectranthus* L'Hérit. should be changed from the listed *P. punctatus* (L.f.) L'Hérit. to *P. fruticosus* L'Hérit. This was approved by a majority vote of the appropriate committees, and sanctioned by an International Botanical Congress.

163. *Article 9* seems to be out of place and it is proposed that it should follow Art. 10. The order of its content is also reversed and it should be written as follows:

"The nomenclatural type of a genus or of any taxon between genus and species is a species, that of a family or of any taxon between family and genus is the genus on whose present or former (legitimate or illegitimate) name that of the taxon concerned is based (see also Art. 18); and that of an order or of any taxon between order and family is the family whose name is based on the same generic name.

Note 1. The types of the names of families not based upon generic names are the types of their alternative names (see Art. 18).

164. *Article 10*, as indicated above, should precede Art. 9 and may be renumbered Art. 8.

THE STATUS OF NAMES OF IMPROPER FORM (R. Ross)

Whilst Chapter III of the Code lays down the forms which names of taxa shall take according to their rank, the status of names which contravene these provisions is not at all clear, except in a few particular cases. Names of families, subfamilies, tribes, and subtribes with improper terminations are to be corrected (Art. 18 [1]), 19) and single specific or infraspecific epithets consisting of two or more words not united or hyphened are to be united or hyphened (Art. 23), it being implied in both cases that the name, when corrected, is to be regarded as legitimate. The only other case where any definite statement is made is in the last para. of Art. 23, which reads: "Binary combinations of a specific epithet with the word *Anonymos* (or similar token words) are illegitimate, since the word *Anonymos* is not a generic name (see Art. 68(1)). Such combinations are not taken into consideration for purposes of priority of the epithet concerned."

Article 68, however, reads: "Names of genera are illegitimate and must be rejected in the following special cases:

1) When they are merely words not intended as names."

If *Anonymos* and similar token words are not generic names, then presumably Art. 42 applies to epithets published in combination with them, and such epithets are not only illegitimate but not validly published. On the other hand, if *Anonymos* and similar token words have the status of validly published but illegitimate generic names, then the last para. of Art. 23 is an exception to Art. 70, Note 3.

There is a further series of provisions limiting the forms which names for genera and taxa of lower rank can take in Chapter V, Sect. 6, and here names of the forbidden forms are said to be illegitimate, thereby implying that they are to be treated as validly published. One might from this draw the conclusion that names contravening Chapter III are also to be regarded as illegitimate.

For the most part it makes no difference whether names of improper form are treated, like names not validly published, as having no status under the Code or are regarded as validly published but illegitimate. Where the names of genera and species are concerned, however, Art. 42 will apply to epithets of subordinate taxa published in combination with them if they are treated as not validly published, and Art. 68, Note 3, if they are treated as validly published but illegitimate. Also, if names covered by Art. 70 (5) are to be regarded as validly published but illegitimate, as the wording of the article suggests, the existence of such a descriptive name reduced to two words will make illegitimate under Art. 64 (2) the use of the same name with the second word used as a true specific epithet.

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[1]) The Editorial Committee inserted Note 1 to Art. 18, extending this provision to families, without any authority from the Congress. It should be struck out. However, a proposal on this point will appear elsewhere.

It has been the normal custom of botanists to regard names contravening the provisions of Chapter III as having, like names not validly published, no status under the Code. Moreover, they have so treated names contravening some of the provisions of Chapter V, Sect. 6. This is contrary to the letter of the present Code, a situation which has arisen mainly because the Stockholm Code, in which the words "legitimate", etc., were used with much more precision than formerly, was not so edited, in this particular series of provisions, as to reflect established custom. This should now be put right, and to do so Art. 68, Art. 69 (3), Art. 70 (2), (3), (4), (5), and Art. 71, should be transferred to Chapter III, and a provision that names, to be validly published, must comply with Chapter III should be inserted in Chapter IV, Section 2. This will have the advantage of bringing together in one chapter all the rules about the forms of names. It will necessitate considerable amendments to Chapter III, and at the same time it would improve the arrangement of Code if Art. 21, third para., and Art. 27, which are special provisions about homonyms, were removed to Art. 64 (2). In addition, the last paragraph of Art. 23, dealing with specific epithets published under token words that are not generic names, should be transferred to Art. 42. The amendments below are proposed to effect all this, and the opportunity is taken of adding a further example of words not intended as generic names to draw attention to a case which might mislead.

165. *Article 20.* Add the following: "The name of a genus may not coincide with a technical term currently used in morphology unless it was published before 1 Jan. 1912 and was accompanied, when originally published, by specific names published in accordance with the binary method of Linnaeus.

"Examples: The generic name *Radicula* . . .

"The name of a genus may not consist of two words, unless these words were from the first combined into one or joined by a hyphen.

"Example: The generic name *Uva ursi* . . .

"Note: The following are not to be regarded as generic names: 1) words not intended as names.

"Example: *Anonymos* Walt. . . .

"*Schaenoides* and *Scirpoides*, used by Rottböll, Descr. Pl. Rar. Progr.: 14, 27. 1772 to indicate unnamed genera resembling *Schoenus* and *Scirpus* which he stated (op. cit.: 7) he intended to name later are token words and not generic names. *Kyllingia* Rottböll and *Fuirena* Rottböll (Descr. Icon. Pl.: 13, 70. 1773) are the first legitimate names of these genera. 2) unitary designations of species.

"Example: F. Ehrhart . . ."

(The examples are those of the present Art. 68.)

166. *Article 21.* Add to the second para.: "or the prefix *Eu-*." Delete the third para.

167. *Article 23.* Add after the third para. and its examples:

"The specific epithet may not exactly repeat the generic name with or without the addition of a transcribed symbol (tautonym).

"Examples: *Linaria* . . ."

Delete the last para.

Add the following at the end of the Article:

"Note: The following are not to be regarded as specific epithets: 1) words not intended as names,

"Examples: *Viola "qualis"* . . .

2) ordinal adjectives used for enumeration,

"Examples: *Boletus* . . .

3) those published in works in which the Linnaean system of binary nomenclature for species was not consistently employed.

"Examples: The name *Abutilon album* . . .

"Linnaeus is regarded as having used binary nomenclature for species consistently from 1753 onwards, although there are exceptions, e.g. *Apocynum fol. androsaemi* L. (Sp. Pl.: 213. 1753)."

(The examples are those of the present Art. 70.)

168. *Article 24.* For the third para. substitute the present Art. 71.

169. *Article 27.* Delete.

170. *Article 32.* Delete "both" in second line.

After "(see Art. 29)" read: ", (2) have a form which complies with the provisions of Chapter III, and (3) be accompanied . . ."

171. *Article 42.* Add the following:

"Note: This Article applies to specific and

other epithets published under *Anonymos* and other token words that are not generic names (see Art. 20, Note, (1)).

"Examples: The binary combination *Anonymos aquatica* Walt. (Fl. Carol. 230. 1778) is not validly published. The correct name for . . .

(This example is from the present Art. 23.)

"The binary combination *Scirpoides paradoxus* Rottböll (Descr. Pl. Rar. Progr.: 27. 1772) is not validly published since *Scirpoides* is a token word, not a generic name. The first validly published name for this species is *Fuirena umbellata* Rottböll (Descr. Icon. Pl.: 70. 1773).

172. *Article 64(2).* Add the following:

"The names of two subdivisions of the same genus, or of two infraspecific taxa within the same species, even if they are of different rank, are treated as homonyms if they have the same epithet and are not based on the same type. The same epithet may be used for subdivisions of different genera, and for infraspecific taxa within different species.

"Examples: Under *Verbascum* . . . (from present Art. 21).

"The following is illegitimate: *Erysimum* . . . Art. 26." (from present Art. 27)."

173. *Article 68.* Delete.

174. *Article 69.* Delete (3).

175. *Article 70.* Delete (2), (3), (4), (5), and Note 1.

ARTICLE 18 (A. A. Bullock)

176. The alternative names of the families mentioned in *Article 18, Note 2* should be listed as follows:

Palmae	*Arecaceae* Type: *Areca* Linn.
Gramineae	*Poaceae* Type: *Poa* Linn.
Cruciferae	*Brassicaceae* Type: *Brassica* Linn.
Leguminosae	*Fabaceae* Type: *Faba* Mill. (= *Vicia* Linn. p.p.)
Guttiferae	*Clusiaceae* Type: *Clusia* Linn.
Umbelliferae	*Apiaceae* Type: *Apium* Linn.
Labiatae	*Lamiaceae* Type: *Lamium* Linn.
Compositae	*Asteraceae* Type: *Aster* Linn.

177. The second para. of *Article 18, Note 2* would be more explicit if worded as follows:

"When *Papilionaceae* are regarded as a family distinct from the remainder of the *Leguminosae,* that name is conserved against *Leguminosae.* The alternative name is *Fabaceae.* This is an unique exception to Art. 51."

A cross-reference to this in Art. 51 is required. The following is proposed:

178. Add at the end of *Article 51:* "An unique exception is made for the family name *Papilionaceae* (see Art. 18, Note 2).

THE NAMES IN NECKER'S ELEMENTA BOTANICA (J. E. Dandy and R. Ross)

The unitary designations of species employed by F. Ehrhart have never been regarded as forming part of botanical nomenclature. On the other hand those used by Necker have often been treated as names of genera. They have been listed as such in standard indices, e.g. Steudel, Nomencl. Bot., Pfeiffer, Nomencl. Bot., Index Kewensis, and Dalla Torre et Harms, Gen. Siphonog., and a number of them appear as conserved or rejected names in Appendix III of the Code. The reason for this is that Necker, unlike Ehrhart, etc., adopted for his species many generic names of earlier authors, and the taxa to which he applied them were largely comparable in circumscription to the genera of other authors. On the other hand most of his contemporaries ignored Necker's names, and many recent authors, (e.g. Stearn in Rowley, Nat. Cactus Succ. Journ., 8: 45. 1953) concerned with establishing the correct names of plants, have considered that Necker's names could not be regarded as validly published generic names under the Code. Others, e.g. Proskauer (Taxon, 7: 125-130. 1958), have come to the opposite conclusion.

In view of this conflict of opinion, it is clear that, in the interests of stability, there should be a definite statement in the Code about the status of these names. Whether this should, as Mansfeld proposes (Taxon, 7: 155-6. 1958), state that they are to be treated as validly published generic names, or whether they should be declared not to be

such depends upon which course will result in least disturbance of current nomenclature. A detailed analysis of Necker's names is being prepared and will be published before the Montreal Congress. As far as it has gone, it indicates the desirability of rejecting Necker's names. The authors of this proposal consider that the most suitable way in which to do this would be to add such names as a further example of the unitary designation of species to be rejected under Art. 68 (3), for we hold the view that Necker used the term "species", just as Linnaeus did, for the smallest permanent and constant groups into which plants could be divided; they differed not in their terminology but in their taxonomic judgment. Some of our colleagues, however, consider that Proskauer's arguments in the opposite sense are convincing, and, as we regard the rejection of Necker's names as much more important than the method by which it is done, we put forward the following proposal:

179. Add to *Article 20:* "Note: The names of the taxa called "species naturales" by Necker, Elem. Bot. 1790, are not to be treated as names of genera."

NAMES OF SUBDIVISIONS OF GENERA

(R. Ross)

The provisions which form Rec. 21A of the present Code were in the previous edition (Int. Code Bot. Nomencl. ... Stockholm, 1950. Utrecht, 1952) included in the preceding article. Neither arrangement is satisfactory, for in the present Code there is no mandatory provision to limit the form which the subdivisional epithet may take, and in the Stockholm Code the provisions about the ranks of subdivision for which each of the alternative forms of epithet was to be used, although worded in the form of a recommendation, and rightly so, were included in an article. That part of Rec. 21A that deals with the forms of names should be put back into the Article.

Furthermore, Rec. 22A and Rec. 22B would be better placed after Art. 21, Rec. 22B being put first and Rec. 22A combined with the part of present Rec. 21A which does not become an article. The following amendments, which include an improved wording of the present Rec. 22A, second para., are therefore proposed:

180. *Article 21.* Add to first para.: "The epithet is either a substantive of the same form as a generic name, or a plural adjective agreeing in gender with the generic name and written with a capital initial letter."

181. *Recommendation 22B* to become *Recommendation 21A.*

182. *Recommendation 21B.* To read: "The epithet of a subgenus or a section is usually a substantive, that of a subsection or lower subdivision of a genus is preferably a plural adjective.

"Botanists, when proposing new epithets for subdivisions of genera, should avoid those in the form of a substantive when other coordinate subdivisions of the same genus have those in the form of a plural adjective, and vice versa.

"They should also avoid, when proposing an epithet for a subdivision of a genus, one already used for a subdivision of a closely related genus, or one which is identical with the name of such a genus.

"If it is desired to indicate the resemblance of a subgenus or section (other than the type subgenus or section) of one genus to another genus, the ending *-oides* or *-opsis* may be added to the name of that other genus to form the epithet of the subgenus or section concerned."

DESCRIPTION, DIAGNOSIS AND DEFINITION (R. Ross)

One of the basic principles of the Code of Nomenclature, although it is not included in those set out in Division I, is that every name, to have any status in botanical nomenclature, must be accompanied by an indication of the characters of the taxon to which it applies. The provisions which ensure this form Chapter IV, Section 2, of the Code. Although in certain circumstances that indication can be an illustration with analysis, it must normally be in words to comply with the provisions of this section. That verbal indication is termed a "description" throughout the section, except in Art. 34, where "diagnosis" is used. The difficulty of deciding whether a particular form of words is or is not sufficient to satisfy the provisions of Chapter IV, Section 2, has been discussed by De Wit (Taxon, 5: 4-7. 1956) and Ross (Taxon, 5: 41-3. 1956), and Bullock (Taxon, 6: 215-6. 1957) has also recently made some remarks about what is desirable.

Bullock, in proposing an amended wording for Art. 34, suggested that "diagnosis" in that article should be replaced by "description" on the grounds that some authors were saying too little in Latin about the new taxa for which they were proposing names. His view is that a full description should in future be regarded as necessary for validating names of new taxa. This would represent a break with previous practice, for up to the present a definition has always been considered adequate to validate a new name. As Cain (Proc. Linn. Soc. London, 169: 144-163. 1958) has recently pointed out, it was a definition that Linnaeus provided in his "specific name", as distinct from his trivial name, for each species, and in so doing he was following the precepts of Aristotelean logic. These require that every entity in a classification be defined, the definition consisting of a "genus" and a "differentia", that is to say of a statement of the group to which the entity belongs and of the character or characters which distinguish it from all other entities within that group. In botanical literature the "genus" in this sense to which a taxon is assigned is often only indicated in a very general way by implication; thus in older works it may only be implied that a genus, in the botanical sense, belongs to the flowering plants. A statement of the character or characters that are unique to it is, however, a definition in the above sense.

In spite of all the developments in taxonomy during the past two hundred years, a definition in the Aristotelean sense is still all that is essential to indicate the entity to which a name is to be applied. It might be well if "definition" were to replace both "description" and "diagnosis" in Chapter IV, Section 2. "Description" is not really a suitable word for it suggests that much more than a statement of the differential characters is required to fulfil the requirements of this section of the Code. The primary meaning of "diagnosis" is the mental process of deciding on the position of something in a classification. The following proposal is therefore made:

183. *Chapter IV, Section 2.* Throughout this section, for "description" read "definition".

184. *Article 34.* For "diagnosis" read "definition".

Whichever word is used, and especially if it is decided to retain "description", these provisions will be much more unequivocal if there is an explicit statement of what is required. The following is therefore proposed:

185. *Article 32.* Add the following note before the existing notes: "Note. A definition [description] is a statement intended to indicate the character or characters by which a taxon is to be distinguished."

This note will not only provide a clear guide in almost every case to whether or not a name is validly published, but also it states established custom and is in logical accord with the principle stated in the opening sentence of this contribution. It will, if accepted, make the mandatory provisions of the Code more explicit but no more stringent than they are at present. There is, however, substance in Bullock's view that in publishing new taxa a description in Latin and not only a definition is desirable. The insertion of the following new recommendation is therefore proposed:

186. *"New Recommendation 34A.* Authors publishing names of new taxa should give or cite a full description in Latin."

REFERENCE TO THE BASIONYM

(F. C. Deighton)

The wording of the third para. of *Article 32* was altered from that in the Stockholm Code, where it was *Article 42,* second para., because it was thought by the Editorial Committee that the word "place" in the Stockholm wording might be taken to mean solely the geographical locality at which was issued the work in which the basionym was validly published. There was no intention of altering the effect of the provision. The wording of the Stockholm Code, provided "place" was read correctly, made it clear that the work in which a new combination appears must contain a statement of what the basionym is, its author, the title of the work or serial in which it appeared, the volume number if applicable, the number of the page, plate, specimen (in the case of exsiccatae), etc., where it was validly published, and the date, errors of citation being ignored. This is what "a full reference to its author and original publication" was intended to convey, but there has been a tendency to associate the

words "(direct or indirect)" in the first para. of the article with "reference" in the second and to cite a work in which the data about the original publication appear instead of actually giving the data. Thus Dr. A. Munk (in Dansk. Bot. Ark. 17(1): 58. 1957) wrote as follows: "Neuronectria peziza (Tode ex Fr.) Munk n. comb.

Syn. very numerous; vide Weese 1914, p. 100 sub *Nectria peziza*." Weese, 1914, does not appear in the bibliography at the end of the article or elsewhere therein.

Similarly Dr. R. Ciferri (in Mycopathologia, 7: 86-89. 1954) listed a large number of new combinations under *Meliola* in the following form:

"M. crotonis (Stev. et Teh.) = *Irene crotonis* Stev. et Teh. = *Irenopsis crotonis* Stev." and added at the end of the list "(For bibliographic references see F. Petrak, Indexes of Fungi, republished by The Commonwealth Mycological Institute, Kew, and the Indexes of Fungi from the year 1940 up to now)."

The publication of these new combinations by Munk and Ciferri do not comply with Art. 32, third para., if this is interpreted as originally intended, and they would appear not to have been validly published. This, however, has been questioned, and it would therefore be well if the wording of the article were altered to make clearer what its requirements are. At the same time it should be made clear that it applies to all new names, not only to combinations and cases where an epithet cannot be used in a new position, but also to those replacing illegitimate names. The following is therefore proposed:

187. *Article 32*, third paragraph to read: "A new combination or a new name published after 1 Jan. 1953, is not validly published unless its basionym (name-bringing or epithet-bringing synonym) or substituted synonym is clearly indicated and a full and direct reference given to its author and original publication with page, or plate, etc., reference and date."

188. Add the following Note to *Article 32*, third paragraph as Note 1, present Notes 1 and 3 becoming Notes 3 and 4 respectively: "Mere reference to the "Index Kewensis", the "Index of Fungi", or any work other than that in which the name was validly published, does not constitute a full and direct reference to the original publication of a name."

ARTICLE 33, SECOND EXAMPLE

(A. A. Bullock)

There is some doubt as to the meaning of "these names" in the last line. The intention is clear under the provisions of the first part of the article. Ducke did not accept the names under *Piratinera* and they were therefore not validly published. Those under *Brosimum* were accepted by him and, being published before 1 Jan. 1953, are validly published.

189. *Article 33*, second example. The last sentence should read "The publication of the names under *Brosimum* which were accepted by Ducke and published before 1 Jan. 1953, is valid, whilst that of the names under *Piratinera*, not accepted by Ducke, is invalid. If these names had been published after 1 Jan. 1953, all of them would be regarded as invalidly published.

ARTICLE 35, INDICATION OF TYPE

(F. C. Deighton)

This new article has given rise to certain difficulties of interpretation. The Code does not state in what way the type should be indicated, nor in what language such indication should be made. Apparently there is nothing to compel an author to indicate the type in words along with the original diagnosis of the name; he may therefore, presumably indicate it by marking a herbarium specimen 'Type' (in any language he chooses) but is not compelled to give notification that he has done so at the time when he first publishes the new taxon. It is obviously essential and intended that a clear indication should be given at the time of the original publication of the name, and so that this should be understandable by everyone, the indication should be in Latin, as is the diagnosis. In a recent publication everything except the name and diagnosis has been in Japanese, and without a translation from that language it has been impossible to know whether or not the name is validly published. As any proposal to effect this will mean a more stringent requirement than formerly, it must have effect from some future date. The following is therefore proposed:

190. *Article 35*. Add the following: "The nomenclatural type of a name published on

or after 1 Jan. 1961 must be indicated by the insertion of the Latin word 'typus' (or 'holotypus', etc.) immediately before or after the particulars of the type so designated.

191. Add the following *new recommendation 35A:* "The indication of the type should follow immediately the Latin diagnosis."

SUPERFLUOUS NAMES (R. Ross)

There are cases where a new combination whose basionym is legitimate is itself superfluous because there was available an earlier legitimate epithet. In some such cases the earlier epithet has ceased to be available, either because of an alteration of circumscription or because of its use in the genus in question for another taxon of the same rank. The situation then arises that the name which Arts. 54-56 say is to be used for the taxon is illegitimate under Art. 64 (1). This gives rises to various difficulties. The cases are inevitably complicated, and it will be best to consider actual examples.

Andropogon fasciculatum L. (Sp. Pl.: 1047, 1753) and *Agrostis radiata* L. (Syst. Nat., ed. 10, 2: 873. 1759) are described as two independent species. Swartz (Nov. Gen. Sp. Pl.: 26. 1788) made the combination *Chloris radiata* (L.) Sw. thus:

"*radiata.* 5. C. spicis (subsenis) plurimis fasciculatis erectiusculis, flosculis subulatis aristatis glabris.

Agrostis radiata *Linn.*
Andropogon fasciculatum *Linn.*
India occidentalis."

Chloris radiata was accordingly superfluous when published, for the earlier epithet *fasciculatum* was available. However, Hackel in DC., Monogr., 6: 177 (1889) stated that *Andropogon fasciculatum* L. was not conspecific with *Chloris radiata* (L.) Sw. His view has been accepted ever since, as has the view that *Agrostis radiata* L. is correctly placed in the genus *Chloris.* Given the acceptance of these views, Art. 55 indicates that the correct name for *Agrostis radiata* L. is *Chloris radiata,* but this is illegitimate under Art. 64 (1).

A more complicated example is the orchid whose first legitimate name is *Ophrys peruviana* Aubl.; this is currently treated as belonging to the genus *Spiranthes.* The following is an annotated synonymy.

Ophrys peruviana Aubl., Hist. Pl. Guiane Franc. 2: 816 (1775) non *Spiranthes peruviana* C. Presl (1827).

Satyrium spirale Sw., Nov. Gen. Sp. Pl.: 118 (1788) non *Neottia spiralis* (L.) Sw. (1800).

nec *Ibidium spirale* (L.) Salisb. (1812).

vel Salisb. ex House (1905).

nec *Spiranthes spiralis* (L.) Chevall. (1836).

This was described as a new species with no reference to Aublet's work or to any other synonyms. It was treated as a taxonomic synonym of *Ophrys peruviana* by Richard (see sub *Spiranthes tortilis* infra) and this is the currently accepted view.

Ophrys quinquelobata Poir. apud Lam. in Encycl. Méth., Bot. 4: 568 (1798) nom. superfl.

Poiret cites the Burmann description and figure on which *Ophrys peruviana* Aubl. is based.

Neottia tortilis Sw. in K. Vet. Akad. Nya Handl., Stockh. 21: 226 (1800) nom. nov. pro *Satyrium spirale* Sw. non *Neottia spiralis* (L.) Sw.

This is a legitimate name since the epithet *spirale* was not available because Swartz used it in this work for another species of *Neottia* based on *Ophrys spiralis* L.

Neottia quadridentata Willd., Sp. Pl. 4: 73 (1805) nom. superfl. Willdenow cited *Ophrys peruviana* Aubl. as a synonym, and hence this name is superfluous, for the combination *Neottia peruviana* was not pre-occupied.

Spiranthes tortilis (Sw.) Rich. in Mém. Mus. Hist. Nat. 4: 59 (1818) nom. superfl.

This name was published by Richard thus: "4. *S. tortilis.* Neottia tortilis Willd. 74. et Neottia quadridentata Willd. 73."

Willdenow (Sp. Pl. 4: 74. 1805) attributed *Neottia tortilis* to Swartz and also cited as a synonym *Satyrium spirale* Sw. on which that name is based. This name is therefore superfluous, for the epithet *peruviana,* from *Ophrys peruviana* Aubl. for which *Neottia quadridentata* is a superfluous name, was available. The combination *Spiranthes peruviana* was legitimately used for a different species by C. Presl in 1827. The epithet *spirale* from *Satyrium spirale* Sw., on which *Neottia tortilis* was founded, continued to be available until 1836, when Chevallier founded the combination *Spiranthes spiralis* on *Ophrys spiralis* L. The first author to use the name *Spiranthes tortilis* subsequent to this was apparently Lindley (Gen. Sp. Orchid. Pl.: 468 (1840).

Spiranthes quadridentata Lindl. in Bot. Reg. 10: sub t. 823 (1824) nom. superfl.

Lindley published this name as follows: "15. S. quadridentata. *Nob. Neottia* 4-*dentata* Willd."

The name is superfluous since the epithet *peruviana,* from *Ophrys peruviana* Aubl., for which *Neottia quadridentata* is a superfluous name, was available. This name differs in status from *Spiranthes tortilis* in that its epithet was not taken from a legitimate name.

Gyrostachys peruviana (Aubl.) O. Kuntze, Rev. Gen. Pl. 2: 663 (1891) nom. illegit.

Gyrostachys O. Kuntze, loc. cit., is a superfluous name for *Spiranthes* Rich. It was not validly published by Persoon in 1807.

Ibidium tortilis (Sw.) House in Muhlenbergia, 1: 129 (1906) nom. illegit. "*tortilis*".

Ibidium Salisb. in Trans. Hort. Soc. Lond. 1: 292 (1812) is listed in the Code as rejected against *Spiranthes* Rich. It was apparently published as a substitute for *Neottia* Sw. in K. Vet. Akad. Nya Handl. 21: 225 (1800) non Ludw., Inst. Bot. ed. alt.: 135. 1757, but the reference is rather vague and its status uncertain. It was certainly validly published as a superfluous name for *Spiranthes* by House in Bull. Torrey Club 32: 380 (1905). Since the combination *Ibidium spirale* was not available in 1906, and since House excludes *Ophrys peruviana* Aubl., his choice of epithet was correct under the Code.

Spiranthes quinquelobata Urb. in Fedde Repert. Sp. Nov. 15: 305 (1918). Urban cites all the names cited above except *Neottia quadridentata, Spiranthes quadridentata,* and *Gyrostachys peruviana.* This is the correct name in the genus *Spiranthes* for this species if *Spiranthes tortilis* cannot be used.

The names which we need to consider are *Chloris radiata* and *Spiranthes tortilis.* The first problem is whether they must be rejected under Art. 64 (1) in spite of the fact that their epithets are the earliest legitimate ones for the species other than those not available because of earlier homonyms in the respective genera. That Art. 72, Note, makes it correct to use them was suggested by the *Gossypium* example to that provision in the Stockholm Code, where it was Art. 81, second sentence. This example implied that, although *Gossypium sturtii* F. v. Muell. was a superfluous name when published, for it was based on *Sturtia gossypioides* R. Br. and the combination *Gossypium gossypioides* was not pre-occupied, it was legitimate for the name to be brought into use after the publication of *Gossypium gossypioides* Standley (1923) based on another type, the authority for the name being not von Mueller but Hutchinson, Silow & Stephens, who revived it in 1947, and its priority dating from that year. If this interpretation of the Code is accepted, the correct names, authorities, and dates of the two species which we are considering are *Chloris radiata* (L.) Hack. (1889) and *Spiranthes tortilis* (Sw.) Lindl. (1840). The *Gossypium* example was deleted from the Paris Code because it was established that Willis had applied the name *Gossypium sturtianum* to the species earlier in 1947 than *G. sturtii* had been revived for it. It should, however, never have been included in the Code, for its final statement is not in accordance with its provisions. Art. 72, Note, (Paris = Art. 81, second para., Stockholm) only authorises the adoption of an epithet that has formed part of an illegitimate name applied to the taxon, not the adoption of the illegitimate name itself. *Gossypium sturtii* was superfluous when published as a new name for *Sturtia gossypioides* R. Br. and hence its use as a synonym of R. Brown's name is illegitimate under Art. 64 (1), and its use in any other sense is illegitimate under Art. 64 (2), the homonym rule. It seems that the same reasoning must apply, as the Code stands at present, to *Chloris radiata* and *Spiranthes tortilis,* although they differ from *Gossypium sturtii* in having epithets taken from legitimate names. In other words Art. 64 (1), where it applies, overrules Arts. 54-6.

The typification of *Chloris radiata* (L.) Sw. and *Spiranthes tortilis* (Sw.) Rich. raises another question. The type of a new combination is that of its basionym; on the other hand the type of a superfluous name is that of the name or epithet which ought to have been adopted under the rules. Applying the first of these principles, the types of *Chloris radiata* and *Spiranthes tortilis* are, respectively, those of *Agrostis radiata* L. and *Satyrium spirale* Sw., applying the second, they are those of *Andropogon fasciculatum* L. and *Ophrys peruviana* Aubl.

It seems most unsatisfactory that anything other than the fact that the combination is pre-occupied by a homonym should prevent the use of the earliest legitimate epithet for an infrageneric taxon. It is also clearly desirable that the type of a new combination

should be the type of its basionym. This can be achieved by introducing a note to Art. 64 (1) excluding from it superfluous new combinations the epithet of whose basionym is legitimate. Such names as *Chloris radiata* and *Spiranthes tortilis* would then be regarded as legitimate but incorrect when published but as becoming correct later. There would be no need for the often inconclusive search for the first use of the name after the obstacles to its correct use had disappeared. On the other hand the permanently illegitimate status of such names as *Gossypium sturtii* would not be affected. The following is therefore proposed:

192. *Article 64 (1).* Add: "Note: A nomenclaturally superfluous new combination is not illegitimate if the epithet of its basionym is legitimate. When published it is incorrect, but it may become correct later.

"Examples: *Chloris radiata* (L.) Sw. (Nov. Gen. Sp. Pl.: 26. 1788) based on *Agrostis radiata* L. (Syst. Nat., ed. 10, 2: 873. 1759) was nomenclaturally superfluous when published since Swartz also cited *Andropogon fasciculatum* L. (Sp. Pl.: 1047. 1753) as a synonym. It is however the correct name in the genus *Chloris* for *Agrostis radiata* when *Andropogon fasciculatum* is treated as a different species as was done by Hackel (DC. Monogr. 6: 177. 1889).

"*Spiranthes tortilis* (Sw.) Rich. (Mém. Mus. Hist. Nat. 4: 59. 1818) was nomenclaturally superfluous when published since Richard cited as synonyms *Neottia quadridentata* Willd. (Sp. Pl. 4: 73. 1805), an illegitimate superfluous name for *Ophrys peruviana* Aubl. (Hist. Pl. Guiane Franç. 2: 816. 1775), and the basionym *Neottia tortilis* Sw. (K. Vet. Akad. Nya Handl., Stockh., 21: 226. 1800), a legitimate new name for *Satyrium spirale* Sw. (Nov. Gen. Sp. Pl.: 118. 1788) non *Neottia spiralis* (L.) Sw. (1800). After the publication of *Spiranthes peruviana* C. Presl (1827) and *Spiranthes spiralis* (L.) Chevall. (1836), it became the correct name in *Spiranthes* for the species as circumscribed by Richard. Should *Ophrys peruviana* Aubl. and *Satyrium spirale* Sw. be regarded as different species of *Spiranthes, Spiranthes tortilis* (Sw.) Rich. would be the correct name for *Satyrium spirale* Sw. and a new epithet would be required for *Ophrys peruviana* Aubl. Neither *Spiranthes quadridentata* Lindl. (Bot. Reg. 10: sub t. 823. 1824), based on *Neottia quadridentata* Willd., nor *Spiranthes quinquelobata* Urb. (Fedde Repert. Spec. Nov. 15: 305. 1918), based on *Ophrys quinquelobata* Poir in Lam. (Encycl. Méth., Bot. 4: 568. 1798), another illegitimate name for *Ophrys peruviana* Aubl., can be used, for both were superfluous when published and their epithets are not derived from legitimate basionyms. The combination *Spiranthes peruviana* was not pre-occupied in 1824, and Urban cited *Satyrium spirale* Sw. and *Neottia tortilis* Sw. as synonyms.

ARTICLE 66 (R. Ross)

The examples to this article indicate that it only applies to cases where two separate organisms are thought to be organically connected parts of a single individual. It is quite right that names applied to such composites should be rejected, unless one of them provides only a very minor part of the description. A redrafting of this article to make these points clear is proposed as follows:

193. *Article 66.* To read: "A name must be rejected if it is based on a type consisting of two or more entirely discordant elements believed by the author to be parts of a single individual, unless one or more of them form so minor a part that the other can be chosen as type."

GENDER OF GENERIC NAMES
(A. A. Bullock)

The gender of generic names is often doubtful, even to a classical scholar; to those with little Latin and less Greek it is worse. Rec. 75A is designed to assist the unlearned, but its helpfulness is largely wasted since the recommendation may be disregarded. It is proposed, therefore, that appropriate parts of Rec. 75A be rewritten to form a new Art.

194. *New Article 75 bis:* A Greek or Latin word adopted as a generic name will retain its classical gender, or the gender assigned to it in 1753 or later.

Note 1. In spite of their classical gender, however, certain generic names will be treated as feminine in accordance with botanical usage.

Examples: The following masculine words are treated as feminine generic names: *Adonis,*

Diospyros, Strychnos. Also *Orchis* and *Stachys,* masculine in Greek and feminine in Latin are treated as feminine.

Note 2. The name *Hemerocallis,* derived from the Latin and Greek neuter *hemerocalles* and given masculine gender by Linnaeus, is treated as feminine, as are all other generic names ending in *-is.*

Generic names compounded of two or more Greek or Latin words will take the gender of the last of these, unless the ending is altered deliberately to give a contrary gender.

Examples: *Andropogon* was treated as neuter by Linnaeus, but since *pogon* is masculine, it should, like all other compounds ending in *-pogon,* be treated as masculine. Other masculine endings are *-codon, -myces, -odon, -panax, -stemon.* Similarly generic names ending in *-mecon* are feminine, as are those with *-achne, -carpha, -cephala, -chlamys, -daphne* and *-osma,* whilst the endings *-ceras, -dendron, -nema, -phragma, -stigma* and *-stoma* are neuter. Classically, names ending in *-anthos, -anthus, -chilos, -chilus* or *-cheilos* should be neuter, but they are treated as masculine by botanical usage. Also, names ending in *-gaster* should be feminine but are treated as masculine. Deliberately changed endings are shown by compounds ending in *-carpus* (masculine), *carpa* or *carpaea* (feminine) and *-carpon, -carpum* or *-carpium* (neuter).

Generic names ending in *-oides* or *-odes* are treated as feminine, regardless of the gender originally assigned to them.

Arbitrarily formed generic names, vernacular names or adjectives used as generic names, whose gender is not apparent, take the gender assigned to them by their authors or by the first author to do so.

Examples: *Taonabo* Aubl. (vernacular name) made feminine by Aublet. *Agati* Adans. (vernacular name) with no apparent gender, was made feminine by Desvaux who was the first subsequent author to adopt the name. *Cordyceps* Link (adjective) was made masculine by Link by assigning to the genus species such as *C. capitatus* with normal masculine endings.

ORTHOGRAPHY (F. C. Deighton)

Though, according to Art. 23, para. 2, the epithet of a species "may even be composed arbitrarily", it was not intended that epithets derived from Latin or latinized words should depart from accepted Latin usage. This is implied in Recommendation 73E.

In fungus names, in which it is the common practice to derive the specific epithet from the name of the host plant, incorrectly formed genitives and errors in spelling (e.g. of the stems of nouns used in conjunction with the element *incola* or *icola,* to form a noun in apposition) are common and are likely to continue to be so in the absence of an authoritative list of genitives and stems of all plant generic names.

It is therefore desirable that some ruling should be made governing permissible ways of composing epithets for fungus names in order both to ensure that the epithets, if derived from Latin or latinized words, do not contravene accepted Latin usage and to avoid duplication or near-duplication of epithets with identical meaning; and furthermore to make it clear which of such near-duplicated names are to be treated as homonyms.

It is recommended that a list of such rulings should be incorporated in the Code. The following is proposed:

The following Notes (6 and 7) should be added at the end of the present Article 73 and examples:

195. *Article 73, Note 6.* "Latin or latinized words are declinable and must be treated in accordance with accepted usage. The following three different uses of such words shall apply to specific epithets of fungus names:

1) Nouns in apposition must be either descriptions of the fungus itself or, if derived from the name of the host plant or an associated plant or object, must be composed of the stem of such a name with the addition of *incola* or *i-cola.* A descriptive noun in apposition may be the generic name of another fungus.

2) Nouns derived from and referring to the name of the host plant or an associated plant or object may be only in the genitive case (except for those names ending in *incola* or *icola:* see (1) above), and if published in the nominative should be corrected. Nouns of Latin or Greek origin can be spelt in only one way in the genitive case, singular or plural respectively; except for certain Fourth Declension trees names (e.g. *Quercus*), epithets derived from which, in two or more forms or spellings of the genitive, must be regarded as orthographic variants. The geni-

tive singular is not, however, to be treated as an orthographic variant of the genitive plural.

3) Adjectives derived from the host plant name, etc., must be accepted as published provided that they are in accordance with accepted usage.

Examples of nouns in apposition which are descriptive epithets of fungi: *Meliola hercules* Hoehnel (the setae of which resemble the club of Hercules); *Thelephora perdix* Hartig (causing the disease known as 'partridge wood'); *Hydnum radula* Fr. (referring to the rough hymenial surface); *Boletus sistotrema* Fr. (from its resemblance to fungi of the genus *Sistotrema* Pers. ex Fr.).

Examples of descriptive epithets which should be corrected: *Peniphora gladiola* G. H. Cunningham, 1955, is an error for *P. gladiolus* (noun in apposition descriptive of the cystidia of the fungus; not to be confused with the epithet *gladioli* which should be used if the fungus was growing on the host plant *Gladiolus*); similarly *Peniophora umbracula* G. H. Cunn. and *P. thermometra* G. H. Cunn. (both epithets being descriptive of the cystidia of the fungus are errors for *P. umbraculum* and *P. thermometrum* (or *thermometron*), respectively; *Botryobasidium heteronemum* John Eriksson, 1958, is an error for *B. heteronema* (noun in apposition descriptive of the hyphal threads of the fungus); *Acytostelium leptosomum* Raper, 1956, is an error for *A. leptosoma* (noun in apposition referring to the small size of the sorocarps).

Examples of nouns derived from the name of the host plant: *Synchytrium biophytum* Mishra, 1953, and *Synchytrium biophyti* Lingappa, 1956, both parasitic on *Biophytum* spp., are both validly published species based on different types. Mishra's name should be corrected [1]) to *S. biophyti* making Lingappa's name a later homonym. Similarly, *Sphaerulina carica* Hara, 1954, on *Ficus carica*, should be corrected to *S. caricae*. (But note that *castaneus* (feminine *castanea*) is an adjective, whereas *Castanea* (decapitalized - *castanea*) is a noun.) The following, however, are not to be regarded as homonyms: *Cercospora smilacina* Sacc., 1881, derived from the name of the host plant *Smilax*, and *Cercospora smilacinae* Ell. & Ev., 1900, derived from the name of the host plant *Smilacina*.

Examples of incorrectly formed genitives which should be corrected: '*antidesmae*' for *antidesmatis*; '*aethionemae*' for *aethionematis*; '*octoknematis*' for *octoknemae*; '*physalicola*' for *physalidicola*; from the respective host plant genera *Antidesma* (neuter), *Aethionema* (neuter), *Octoknema* (from the feminine noun *kneme*) and *Physalis*. The correct genitive of *Echinops* is *echinopis*, while the correct genitive of *Echinopsis* is *echinopsidis*. The epithet '*echinopsidis*' if applied to a fungus growing on *Echinops*, should be corrected to '*echinopis*' and should not be regarded as homonymous with an earlier or later epithet '*echinopsidis*' in the same genus if the latter is clearly intended to be the genitive of *Echinopsis*.

Examples of nouns with alternative genitive forms: Fourth Declension tree names such as *Quercus* and *Ficus* gen. sing. *querci* or *quercus, fici* or *ficus*, gen. plural *quercorum, ficorum*, but also often given by mycologists (incorrectly but now possibly sanctioned by usage) in the Fourth Declension genitive form '*quercuum*', '*ficuum*'. Also *Agrostis*, gen. sing. *agrostis* (fide Lewis & Short, Latin Dictionary, Oxford, 1955), but frequently also given by mycologists, and now accepted by usage, as *agrostidis*'."

196. *Article 73, Note 7.* "Non-latin or non-latinized words used as names or epithets are indeclinable.

Examples: *Cercospora sissoo* Sydow, on *Dalbergia sissoo*; *Cercospora mombin* Petrak & Ciferri, on *Spondias mombin*. The names *sissoo* and *mombin*, being indeclinable, cannot have a genitive form which, in accordance with Note 6 (2) above, would have been used if available. Also *Nectria hauturu* Dingley (a vernacular epithet), *Nectria ruapehu* Dingley (from Mt. Ruapehu, New Zealand).

197. *New Recommendation 73H:* "Epithets of fungus names derived from the generic names of the host plant should be spelt in accordance with the accepted spelling of such a name; other spellings must be regarded as orthographic variants and should be corrected.

Examples: *Phyllachora anonicola* Chardon, 1940, should be altered to *annonicola*, since

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[1]) Such a correction is accepted by bacteriologists. Example: *Bacterium tabacum* Wolf & Foster, 1917, was transferred to *Pseudomonas* as *Ps. tabaci* (Wolf & Foster) F. L. Stevens, 1925.

the spelling *Annona* is now accepted in preference to *Anona; Meliola albizziae* Hansford & Deighton, 1948, should be altered to *albiziae,* since the spelling *Albizia* is now accepted in preference to *Albizzia.*"

198. *New Recommendation 73I:* "Epithets composed of the stem of a substantive (often the generic name of a host plant) with the addition of either *incola* or *i-cola* (both derived from the stem of the Latin verb *colo*) are nouns in apposition, and epithets differing only in the spelling of the appended element '*incola*' or '*icola*' should be treated as orthographic variants. The epithet *corticola* is an error (perhaps now to be regarded as sanctioned by usage) for *corticicola,* and must be regarded as an orthographic variant of it.

Example: *Cercospora acalyphincola* Petrak, 1957: the name *Cercospora acalyphicola,* should it ever be published, would be homonymous."

199. *Article 23, paragraph 2.* Add: "(But see also Recommendation 73E)".

200. *Article 64 (2), Note.* Alter the wording at the end of the Note, from "(See Art. 75)" to read "(See Arts. 73 and 75)".

POSITION OF CONTENTS (A. A. Bullock)

201. It is urged that the *Contents* should be placed at the beginning. This is normal British, American, and German practice. Apart from cost, there is no objection to having it at the end also.

XVII. REGNUM AND SUBREGNUM?

Tyge Christensen (Copenhagen)

In Taxon 7: 149 Fosberg proposes the introduction of a rank of subregnum for such groups as Fungi and Algae, subordinate to the Regnum Vegetabile, but comprising several divisions.

In the present author's opinion, this proposal is inadvisable, as it will link the code more closely to an old and unnatural classification. On the contrary, it may now be time to detach the code from the Linnaean division of the living world into a Regnum Animale and a Regnum Vegetabile.

The primary division used by most present-day authors is a separation of organisms with a proper nucleus from organisms with a nuclear equivalent of different organisation. Among nuclear organisms the red algae are regarded by many phycologists as being primarily acontic, while organisms with flagella composed of eleven strands in all probability form a common natural group. Subdivision of the latter is on the basis of pigments and type of flagellation, an isocontic group comprising green algae and Cormophyta, a heterocontic group uniting Chrysophyta, Phaeophyta, and Oomycetes, etc., and this subdivision, too, precedes any separation of plant and animal groups. Thus animal and algal euglenoids are currently grouped together, and so are algal and holozoic Chrysophyta. For the Metazoa a grouping together with the fungal chytrids and the algal *Pedinomonas* has been proposed, all of which are opisthocontic. Other animal groups show different types of flagellation, and must belong in other places. So, although much is highly uncertain in this sphere, there is little doubt that the categories named animals, algae, and fungi must be regarded as mere practical groups which, as such, have no place in a natural classification.

202. The code should be a formal guide to taxonomists, but should not favour any particular classification. So, instead of inserting a rank between division and regnum, it is proposed that Regnum Vegetabile should be removed from the enumeration of systematic ranks given in *Article 4,* thus leaving authors free to group the divisions as they think best, with more or fewer superior ranks, and with algal, fungal, and animal divisions arranged and connected as agrees best with the actual state of science.

XVIII. PROPOSALS BY YAROSLAV PROKHANOV (U.S.S.R.)

203. Add to *Article 53* the following examples: "*Stipa pennata* L. (Sp. Pl. 1753) has been split into several species all bearing other names. Mansfeld (Verzeichnis Pfl. Deutsch. 1940) rightly reintroduced this name for one of the species, namely *Stipa joannis* Čel. (Oesterr. Bot. Zeitschr. 34: 318. 1884). The latter has to be abandoned."

The introduction of this example, even at the expense of others, is highly desirable

because it would clarify this Article on one of the most usual steppe plants.

204. Add to *Article* 55 the following example (after Tsuga mertensiana): "The species comprising the cultivated soya-bean was published by Linnaeus twice: as *Phaseolus max* and as *Dolichos soja*. The species has been transferred to *Glycine* first by Siebold and Zuccarini (1843), who made use of the latter name, but misapplied it to the wild soya species of Japan, *Glycine ussuriensis* Regel and Maack. Nevertheless the name *Glycine soja* (L.) Sieb. and Zucc. is the correct one for the cultivated species in the original sense of Linnaeus."

The last part of Art. 55 is often insufficiently apprehended. I think a second example based on an important economic plant would be of good service.

205. Add to *Article* 57 the following example: "Fiori and Paoletti (Fl. Ital. I (1): 107. 1896) rightly united *Triticum aestivum* L. (Sp. Pl. 85. 1753) and *T. hybernum* L. (l.c.) into one species under one of these names, *T. aestivum* L. Consequently the latter name is obligatory for the combined taxon comprising common soft wheat. The creation of a new name or the use of an illegitimate one, such as *Triticum vulgare* Vill. (Pl. Dauph. 2: 153) is inadmissable. Furthermore *T. vulgare* has exactly the same circumscription as *T. aestivum*, originally also referring only to the summer varieties of soft wheat."

I think it is important to include this vital example (even, if necessary, at the expense of another, not so important). Such a significant example will not only help better understanding of the rule, but also it will stabilize the nomenclature of this leading food-plant, according to the Code.

206. Add to *Article 60* the following example: "*Valeriana locusta* var. *olitoria* L. When transferred to *Valerianella* must not be named *Valerianella olitoria* (L.) Poll., because in the specific rank there is already an epithet available, namely *locusta*, the type of which is var. *olitoria*. The name must accordingly be *Valerianella locusta* (L.) Betcke."

It seems to me desirable to have in Art. 60 an additional example specially concerned with a complicated case of simultaneous change of rank and of transference to another genus.

207. Add to *Article 62* the two following examples: ".... — The name *Scilla sibirica* Andrews (Bot. Repos. 5. pl. 304. 1804) must not be rejected because the species does not grow in Siberia. — The name *Petrosimonia oppositifolia* (Pall.) Zitw., based on *Polycnemum oppositifolium* Pall. (Reise 1: 422, 431, app. 484. 1771), must not be rejected because the species has leaves only partly opposite, and partly alternate, although there is another closely related species, *Petrosimonia brachiata* (Pall.) Bunge having all its leaves opposite."

The addition of these examples, I am convinced, is absolutely necessary, because all the available examples of Art. 62 are concerned merely with changes in orthography, which are not the main content of the article. Consequently none of the examples of Art. 62 directly pertain to this article.

208. Add to *Article 64 (1)* the following example: "*Picea excelsa* (Lam.) Link is illegitimate, because it is based on *Pinus excelsus* Lam. (Fl. franç. 2: 202. 1778), a superfluous name for *Pinus abies* L. (Sp. Pl. 1002. 1753). Under *Picea* the proper name is *Picea abies* (L.) Karst. (Deutsch. Fl. 325. 1880)."

The inclusion of this example concerning the name of this highly important timber-tree will help to overcome one of the most persistent nomenclatural errors. And besides, this example and the proposed example to Art. 57, both stabilizing the two names required by the Code, which are most embarassing to the laymen, will tend to reduce the ill-founded desire for a special list of Nomina specifica conservanda.

209. Change *Article 65* to be read as follows: "A name must be rejected as ambiguous (nomen ambiguum) if it originally referred to a taxon vaguely circumscribed or ill-defined and subsequently persistently restricted or typified in two or more irreconcilable manners."

"Examples: *Lavandula spica* L. (Sp. Pl. 572. 1753) included ..... must be rejected (see Kew Bull. 1932: 295. — *Betula alba* L. (Sp. Pl. 982. 1753) comprises in its original sense the two species *Betula pendula* Roth (Tent. fl. germ. 1: 405. 1788) and *B. pubescens* Ehrh. (Beitr. 6: 98. 1791). The name *Betula alba* was typified by Roth (1788) in the sense of *B. pubescens* and somewhat earlier by Du Roi (1771) in the sense of *B. pendula*. Subsequently it was used in either sense. It has

therefore become ambiguous and must be rejected. — *Fumaria bulbosa* L. was typified by Miller in two opposite ways, at first (Gard. Dict. ed. 8. 1768) in the sense of *Fumaria cava* (L.) Mill., or *Corydalis cava* (L.) Schweigg. et Kuerte, and then (Gard. Dict. Abr. ed. 6. 1771) in the sense of *Fumaria solida* (L.) Mill., or *Corydalis solida* (L.) Sw. Consequently the name must be rejected."

"This does not apply to the name of a taxon, originally well defined and circumscribed, so as to leave no doubt about its exact application but subsequently misapplied to other taxa outside its original limits. Such a name, if neglected, must be reinstated in its original sense, in view of the temporary character of the confusion involved, presenting no serious obstacle to the usage of the original name. If it is desirable to exclude all possible confusion from the beginning, the reinstating author may be cited after the name of the original author, preceded by the word rest. (restituit)."

"Examples: *Rhinanthus major* L. (Amoen. Ac. 3: 53. 1756) originally referred strictly to one species, subsequently known as *Rhinanthus alectorolophus* (Scop.) Poll. Unfortunately, the name *Rhinanthus major* was used by Ehrhart (Beitr. 6: 144. 1791), and persistently later on, outside its original circumscription, to indicate a different species. Nevertheless the latter must bear another name, *Rh. vernalis* (Zing.) B. Schischk. (the name *Rh. glaber* Lam. being illegitimate), and the name *Rhinanthus major* L. must be reinstated and used in its original sense. — Pugsley rightly reinstated *Orchis latifolia* L. (Sp. Pl. 941. 1753) in its original sense, because its original diagnosis leaves no ambiguity. The name *O. latifolia* L. rest. *Pugsley* must not be replaced by any later one, such as *Orchis strictifolia* Opiz (1825) or its misapplied conventional name *O. incarnata* auct., non. L."

The reason for advocating this amendment of Art. 65 is to create some certainty in the application of this article, by removing from it the unnecessary rejection of any originally well defined name on the ground of subsequent misapplications for which the original author is in no way responsible. At the same time any name of a taxon where there is ambiguity brought about by an original vague description which usually leads to various incompatible applications of the name must be permanently rejected.

210. Add to *Article 74* the following examples:

1) At the end of paragraph (1) incorporate as follows: "..... e.g. *Thuja* (not *Thuya*), *Prunella* (not *Brunella*)."

2) At the end of paragraph (2) incorporate as follows: "..... e.g. *Agrostemma* (not *Agrostema*), *Euonymus* (not *Evonymus*)."

The addition of these very short examples, especially the one dealing with the spelling of Euonymus, I think, is highly desirable because it will help to overcome the continuous fluctuation in the orthography of the names. And besides, the presence of two examples at the end of Art. 74 paragraph (4) shows that there is no reason to object to the similar inclusion of second examples into the paragraphs (1) and (2) of Art. 74.

211. Add to *Recommendation 75A* the following examples:

1) At the end of paragraph (1) incorporate as follows:

"Examples: *Atriplex* should be neuter (not feminine) according to its classical gender, e.g. *Atriplex tataricum* L. — The names *Euonymus* and *Celastrus* should be feminine (not masculine) according to their classical gender, e.g. *Euonymus verrucosa* Scop. and *Celastrus orbiculata* L. — *Bidens* should be masculine as the words *dens, tridens* and the like are masculine."

2) Under (2), incorporate into the partial paragraph, beginning with the words: Examples of names formed from Greek words, at the head of the examples, the following:

"Examples of names formed from Greek words: *Parthenocissus* Planch. (in A. DC. Monogr. Phaner. 5(2): 446: 1887) formed from *parthenos* (fem.) and *Cissos,* or *cissus,* (masc.) must be masculine, in accordance with the gender of the last word, e.g. *Parthenocissus quinquefolius* (L.) Planch."

It is inconsistent that in Rec. 75A there should be conventional examples only under paragraph (3), whilst under paragraph (2) there are only special ones, and under paragraph (1) none at all. Also, by incorporating conventional examples, especially some controversial ones, it is possible not only to demonstrate the true gender of the names, but also to stabilize it.

XIX. RECOMMENDATIONS AND PROPOSALS FOR PALYNOLOGICAL SYSTEMATIC NOMENCLATURE

T. van der Hammen (Bogota)

The natural system may of course be used for the classification of fossil pollengrains, but only where definite evidence for the specific or generic position is available. A purely artificial system has to be used for the classification of fossil pollengrains of which the natural generic position is doubtful or unknown.

The artificial classification of pollengrains has to be based exclusively on their morphology, independent of their geologic age, and can take no account of whether their natural systematic position is known, doubtful or unknown. Consequently a pollengrain may eventually be classified in both systems, the natural and the artificial. It makes no difference in principle whether a particular pollengrain is fossil, subfossil or recent, as the age cannot be a generic characteristic, neither of a natural nor of an artificial genus.

An artificial genus cannot be treated as a natural genus, as the former is exclusively based on morphological characters, whilst in the latter natural relationship plays an important role. For that reason artificial systematic nomenclature cannot in all respects be governed by the same International Rules as natural systematic nomenclature. It needs certain special rules, in agreement with its nature.

It is found in practice that there are no natural norms for the order of morphological differences which indicate the separation of two or more artificial genera. Consequently genera are often established on very small differences which might also perfectly well be held to be differences of specific character. There exists at present no rule or criterion to define the magnitude of these generic differences, and theoretically (and also in practice) a new genus for every new species might be established. This is in part the reason why palynological systematic nomenclature is in its present state. Consequently, the type-method alone is insufficient for artificial palynological nomenclature; it needs a definite classification-criterion.

Of morphological pollen (and spore-) characteristics, the number, shape and combination of apertures ("pollen-types"), and the sculpture-types, are amongst the most important. The shape of the grains may be of importance, but often shows considerable specific variations. Exine structure may also be of importance.

It seems most adequate to base generic and subgeneric characteristics principally on "pollentype" and "sculpture-type" respectively. (Which characteristics are of subgeneric, generic or even higher rank might be established by general agreement).

As we know today the majority of the possible "pollen-types" and "sculpture-types", a simplification of the artificial system might be established with great advantages, by always using the same names for the same morphological characteristics, and by using those names for the formation of generic names (for example: Tricolpites for tricolpate grains, Retitricolpites for tricolpate reticulate grains, etc.). In this respect it does not matter so much which names we use (Monolpites or Monosulcites etc.), but it is important that some agreement is reached about it. In this way a basic system of generic names might be established (with the necessary flexibility). These genera could then be based on types, but the generic characteristics will be already prescribed to a certain degree. This is the logical consequence of a consistent artificial system.

If the arguments presented above are accepted, many problems as to pollengrains (and eventually spores) already validly described will have to be solved, but in our opinion palynological nomenclature will be safeguarded from a future state of complete confusion, the signs of which are already visible.

Similar principles have already been used or proposed by different authors (Ibrahim, Erdtman etc.), and their views form the basis of the present proposal, and of the artificial system proposed by us some time ago (van der Hammen, 1954; Principios para la nomenclatura palinológica sistemática, Boletín Geológico Vol. 2,2) and afterwards described in more detail (van der Hammen, 1956; A palynological systematic nomenclature, Bol. Geol. Vol. 4, 2-3).

It will perhaps be the general opinion that the names used in the description mentioned will have to be partially or entirely changed. The important thing seems to be to us, how-

ever, the basic principles, which are in our opinion the logical consequence of the use of an artificial classification-system.

212. The present proposal may be summarized as follows:

1. Both pure natural and pure artificial systematic nomenclature may be used in palynology. A species of which the natural position is known (fossil, subfossil or recent), has also its place in the artificial system. Age cannot be a classification-criterion.

2. The nature of an artificial classification-system (the lack of the criterion of natural relationship), implies the need to establish definite classification-criteria. The type-method alone is insufficient.

3. Morphological differences which represent classification-criteria are, in the order of their importance:

1st order: "Pollen-types" (principally number, shape and position of apertures, number of grains united, presence of air-sacs).

2nd order: "Sculpture type".

(3rd order: Exine structure).

(4th order: Shape).

In pollengrains showing various types of sculpture-elements, the dominant positive elements will decide.

In special cases, exceptions may be made on this rule.

4. Genera and subgenera will be based on types, but in the formation of the generic etc. names, and in the establishment of generic, etc., characteristics, general lines, established by the Congress, will have to be followed.

If the above principles are accepted, the Congress will have to decide on the fate of genera and species already validly described in accordance with systems based on other principles. A solution which may prove satisfactory is that they should continue to be valid, but that they should also be placed in a genus according to the new principles, retaining their specific name.

The artificial system published in 1956 is put forward as a possible solution in agreement with the above-mentioned proposals. Names and relative rank may be changed, if necessary or convenient. Names for discussion are, for instance: Monocolpites or Monosulcites, etc., relative ranks, for instance:

Genus *Tricolpites*	Subgenus	*Psilatricolpites*
	„	*Foveotricolpites*
	„	*Fossutricolpites*
	„	*Scabratricolpites*
	„	*Echitricolpites*
	„	*Verrutricolpites*
	„	*Gemmatricolpites*
	„	*Bacutricolpites*
	„	*Clavatricolpites*
	„	*Retitricolpites*
	„	*Regutricolpites*
	„	*Striatricolpites*

or: *Tricolpates*	genus	*Psilatricolpites*
	„	*Foveotricolpites*
	„	*Fossutricolpites*
	„	*Scabratricolpites* etc.

XX. PROPOSALS BY CZECHOSLOVAK BOTANISTS

J. Dostál, J. Holub, J. Komárek, Z. Pouzar & J. Růžička *

Supplementation and correction of the Code

213. *Article 7.* We suggest that in the Code the terms "standard" and "nomenclatural type" should be distinguished as follows: the term "standard" should be used for the typification of taxa of the rank of order or below, but higher than species, the term "nomenclatural type" to be used for taxa of the rank of species or below. The term "standard" is understood to designate a taxon used for the typification of the nearest higher taxon, the term "nomenclatural type" to designate a plant or its part (preparation) by means of which we typify a species or a taxon of lower rank.

Motivation: In the interest of clearness it is necessary to differentiate between the term used for a type represented by a taxon and a type represented by an actual part of a plant.

Proposed change of Code: *Article 7, paragraph 1* should be altered to read as follows:

"The application of names of taxa of the rank of order or below but above that of species is determined by means of *standards* (typifying taxa), the application of names for

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taxa of the rank of species or below by means of *nomenclatural types* (plants and their parts). Thus a standard or nomenclatural type is that constituent element of a taxon to which the name of the taxon is permanently attached, whether as an accepted name or as a synonym."

214. *Article 17.* We propose that note 1 of Article 18 should be similarly accepted also for an order and added to Article 17.

Motivation: An order, in just the same way as a family, depends as regards its name on the standard (nomenclatural type), and both ought to be formed according to the same rules. There is no reason why different rules should apply to each.

Example: Ralfs 1848 (starting-point) is considered to be the author of the family *Desmidiaceae,* although he published the name of this family with a termination different from the one prescribed now, i.e. "*Desmidieae*". On the other hand, the author of the order would not be cited as Naegeli 1849, who first published after the starting-point "*Desmidiaceae,* ordo *Algarum*", but that author who used not only the stem, but also the prescribed ending, i.e. "*Desmidiales*" (it is probably Pascher).

Proposed: supplementation of Code: Add the following sentence to *Article 17:*

"Note. When the name of an order or suborder has been published with an improper termination, the ending must be changed to accord with the rule, without change of the author's name."

215-216. *Article 16.* The Czechoslovak botanists recommend that the proposal of German and Cuban botanists for the introduction of the category "phylum" should again be considered, and that this category should be introduced into the Code; it should have the ending "*-phytae*", and, in the hierarchy of taxa, it should have a higher rank than "divisio".

Motivation: We consider the taxon "phylum" essential from the taxonomical point of view.

Proposed supplementation of Code:

215. In *Article 4, paragraph 1,* between the words "Regnum vegetabile" and "Divisio" insert the word "Phylum".

216. The *Recommendation 16A, paragraph* (*a*) should read as follows:

"The names of phyla and divisions are preferably taken from characters indicating their nature as closely as possible; the names of phyla should end in *-phytae,* the names of divisions should end in *-phyta,* except in the case of *Fungi,* in which case they should end in *-mycota.* Words of Greek origin should be preferred."

217. *Article 18.* The Czechoslovak botanists are of the opinion that the exceptions permitted in note 2 of Article 18 are unsuitable and inadmissible, and they suggest that *note 2* should be deleted altogether.

218. *Article 24.* The Czechoslovak botanists are of the opinion that the designation of any taxa by means of numbers or letters (or by whatever other symbols than words) is in direct contradiction to the Principles IV and V and therefore inadmissible. They suggest that the words "which receive either epithets or numbers or letters to facilitate their arrangement" should be deleted in Article 24, paragraph 2.

219. *Article 32.* The word "combination" used in paragraph 2 of Article 32 is not sufficiently lucid. We suggest that for it should be substituted the words "combination of name and epithet (including new combinations or new transfers) .....".

220. For a better elucidation of all cases falling under the same heading we recommended the addition to *paragraph* 2 of *Article* 32 of a further sentence (with retrospective validity):

"New transfers and combinations are not considered validly published if published only in synonymy."

221. *Article 37.* This ruling could be equally suitably included in Article 37 by changing the first sentence of the article to read as follows:

"The names of taxa (whether that of a new taxon, a new combination, or a new transfer) are not validly published if they are cited as synonyms."

222. *Article 33.* The wording of the last paragraph of Article 33 and of paragraph 2 of Article 32 seems to be contradictory. Many alternative names referred to in the last paragraph of Article 33 are also cases where the author did not definitely state in which way precisely the epithet is combined to form

the combination. So the paradoxical situation may arise that an alternative name published before Jan. 1st 1953 would be valid according to the last paragraph of Article 33, but not according to paragraph 2 of Article 32. This is also the case with the example mentioned in the last paragraph of Article 33.

The species of the genus *Brosimum* published simultaneously with alternative names under the name *Piratinera* and mentioned in the Code as published validly, are invalid according to Article 32, paragraph 2.

We recommend that both rulings should be elucidated and made to conform.

223. *Article 32.* In the Code it has not been made sufficiently clear what is meant by the term "indirect reference", used in Article 32, paragraph 1. We recommend that in Article 32 the following additional note should be included:

"Note 4. An indirect reference is a clear indication, by the citation of the author's name or in some other way, that the new name is based upon a previously and effectively published diagnosis."

Examples of indirect indication: *Hypochnus* Fr. ex Fr. 1821 is published in Systema mycologicum 1: (14), 450. 1821 without any diagnosis. The abbreviation "Fr." after the name indicates a connection with a previously published (before the starting-point) diagnosis of *Hypochnus* Fr. 1818, Observations 2: 278. 1818 and therefore the name *Hypochnus* Fr. ex Fr. was validly published in 1821. — *Kratzmannia* Opiz (in Berchtold et Opiz Oekon.-techn. Fl. Böhmens 1/2: 398. 1836) is published with a diagnosis, but not definitely accepted by the author and therefore invalid. It is accepted definitely in Opiz Seznam rostlin květeny české p. 56, 1852, but without any diagnosis. The citation of author's name after *Kratzmannia imbricata* (L.) Opiz is an indirect indication of the previously published diagnosis in 1836. — Opiz published the name of the genus *Hemisphace* (Benth.) Opiz in Seznam Květeny České p. 50, 1852 without a diagnosis, but as he wrote *Hemisphace* Benth. he indirectly indicated a previously validly published diagnosis by Bentham, Labiat. Gen. et Spec. 1: 193. 1833.

224. *Article 33.* Up to the present time it has not been explicitly stated in the Code that genera published without their species are valid; in practice, however, they are considered valid. We propose that the following sentence should be added to Article 33:

"The name of a genus is validly published even if the species belonging to that genus are not cited simultaneously."

Examples: The genus *Lorinsera* Opiz (in Berchtold et Opiz Oekonom.-techn. Fl. Böhmens 2/2: 28, 1839) was validly published in a generic key without mention of any species.

225. *Article 39.* A reference to an earlier diagnosis, as stated in Article 39, paragraph 1 (3) may, according to this article, be either direct or indirect. We recommend that, for clearness' sake, this should be explicitly stated, and in the sentence (3), following the words "(3) by reference" the words "(direct or indirect)" should be inserted.

Taxa designated by symbols only

Article 60. In the second half of last century many botanists designated the categories of taxa within the species not by means of terms in word form (e.g. varietas, forma), but by means of symbols (letters, numbers, asterisks, etc.). It is indisputable that, according to Article 4 of the Code, such designations are not permissible; they may not even be considered as "supplementary intercalated categories" in the sense of paragraph 2 of the cited Article, as it might cause "confusion or error". It is therefore necessary to designate such taxa afresh by means of the permissible terms.

The author himself very frequently explained the use of such inadmissible designations, and which category he denoted by this or that symbol. In such a case the inadmissible symbol may be replaced by the respective word-term. This, however, is only admissible in the case of a work in which the necessary explanation is given, or in the keys of those other publications to which the author explicitly refers; this may not even be extended to another work of the same author, as we cannot be certain that the same author did not in different works use different symbols for the same categories.

Examples: Čelakovský explained the use of symbols in the introduction to his Prodromus and in other publications. Nordsted 1872 p. 32 introduced a new taxon with the words: "*Cosmarium pulcherrimum β boreale* n. var.", so here we obviously have to do with a variety. De Bary 1858 p. 72 speaks of a new taxon *Tetmemorus brebissonii*

β minor in the text: ".... ist daher als kleine Varietät .... zu bezeichnen", so in his work of the year 1858 he used Greek letters for varieties. The same holds for Ralfs 1848, as can be seen from the fact, that in the text he speaks at various points of "the var." etc.

In cases where the author did not himself explain the meaning of such symbols, a redesignation must be carried out, if we want to use them. The present Code does not make it absolutely clear which rules should be applied in such cases. The Czechoslovak botanists therefore suggest that a definite ruling should be inserted in the Code with regard to the proper procedure to be used in such cases, and they offer the choice of two alternative solutions.

It would also be possible to solve in a similar way those cases where the author had designated the infraspecific rank by means of a term such as to cause "confusion and error" (Art. 4, para. 2). This holds also for cases where the author forms a new term for a supplementary category according to the cited paragraph, but does not state precisely to what place in the hierarchy of ranks it belongs.

Solution I. Where the rank of a taxon is designated by means of a letter, a number, or a symbol, it may be considered a rank within the species sui generis, and transferred to another legitimate rank according to Article 60 of the Code, i.e. as a "new combination". According to the general rules the original author is cited in brackets in these cases, then follows the author who carried out the change of rank; the priority of the epithet in the new rank is governed by the date of the valid publication of the new combination.

Example: Klebs 1879 p. 6 published a new taxon within the species *Closterium lunula*, designated only "b. *coloratum*". If we consider it a form, then it should be cited as "f. *coloratum* (Klebs) Fischer 1883". If we consider it a variety it is cited as "var. *coloratum* (Klebs) De Toni 1889". It has not yet been published as a subspecies, and an eventual "ssp. *coloratum* (Klebs) comb. nova" would have priority only from the date of a future valid publication.

226. Proposal for the supplementation of the text of Code: Include in Article 4:

"Taxa whose rank has not been precisely designated by means of a term according to this Article and published on and after ..... are invalid. If they were published before this date, it is necessary to designate them subsequently by means of one of the terms admissible under this Article, which will be considered a change of rank of the taxon (Art. 60). If, however, the original author himself has explained in his publication, which admissible term he had in mind when using an inadmissible symbol or term for the category of the taxon, the use of this admissible term is not considered a change of rank of the taxon."

An advantage of this solution is the possible simple adjustment of the Code.

Disadvantages: The date of the validity of the new combination is made later than the original publication, very frequently by a number of years. In the interim, however, names pertaining to the same taxon have often been published, and these would now have priority. This would result in changes of epithets that had been in use for a long time, and would lead to unnecessary nomenclatural confusion. The search for whether the original author had somewhere explained the symbols used in his work, or whether somebody, and if so who, had published the new combination, is sometimes very difficult and impossible for most practical botanists; when this solution is used there would thus remain an uncertainty as to whether the newly formed combination is valid.

Solution II. Taxa whose rank is designated by means of letters, numbers, asterisks, and similar illegitimate symbols may be considered as special categories within the species without any precisely assigned rank, and may be transferred to new, legitimate ranks by citing in each case behind the epithet the author of the original taxon; priority would be governed by the date of the original publication. As can be seen such taxa would, in this way, gain certain advantages, and it would be advisable to prevent the abuse of this advantage in future.

Example: "*Closterium lunula* b. *coloratum* Klebs 1879" would be cited either "f. *coloratum* Klebs 1879" or (according to the citing author's wish) "var. *coloratum* Klebs 1879", thus always with priority as from the original publication in 1879.

Suggestion for the supplementation of the Code:

227. Insert into *Article 60* or as a special article of Code:

"Taxa whose ranks have not been precisely designated by means of terms according to this article and published on and after ..... are invalid. If they were published before this date, it is necessary to designate them subsequently by means of one of the terms admissible according to this Article.

If the original author of such an inadmissible designation himself explained in a valid publication which term is denoted by this or that symbol, the taxon is designated by means of this term. In the other cases they may be designated as of any rank within the species. However, in each case only the name of the original author of the epithet of the taxon is cited, and its priority is governed by the date of the original valid publication."

Advantages of solution II: There is no need to search through the literature to find whether a taxon whose rank had originally been designated by means of a symbol had been referred to a rank denoted by an admissible term later on. The original epithet and also the original date of publication remain valid regardless of later synonyms, which fact (at least in some branches of botany) does away with unnecessary changes of epithets and nomenclatural confusion, and is consistent with the spirit of the rules of the Code with regard to priority.

Disadvantages: There is need for more extensive changes in the Code: A certain group of epithets is preferred in comparison with other groups.

On the binding character of the „Starting point" with regard to its contents

Article 13. Cryptogamists interpret this Article in various ways, especially as regards the typification of taxa published before the "starting-point" and cited in the initial publication. Donk (Taxon 6: 245) is of the opinion that taxa from the time after the publication of Linnaeus' "Species plantarum" up to the publication of the "starting-point" work, if they are contained in this publication, should be typified by means of the original material. If there is any contradiction between the original concept of the author of a taxon and the concept of the author of the "starting-point" publication, it is necessary to give preference to the original concept.

The Czechoslovak botanists are of the opinion that it is always necessary to typify the taxa contained in the "starting-point" publication in the sense of the concept of the author of the "starting-point" publication. Only in the case where a certain taxon cannot be definitely determined in this publication, may it be precisely typified by means of the material of the original author (for the elucidation of the concept in the "starting-point" publication).

Motivation: Nomenclature must be based upon the results of systematic work and it is therefore impossible to separate one from the other. If Donk (l.c. 254) uses the citation "*Hydnum cyathiforme* Schaef. ex Fries", then according to him Fries only validated the name and did not fix its taxonomic content. As the concepts of Schaef. and Fries are not identical (different genera of today!), it is necessary to designate Fries's concept by the name since he is the chief author (Rec. 46A).

228. We propose that Article 13 of the Code be supplemented as follows:

"Note 5. In the case of taxa whose names were published before the date of the "starting-point" and that were used in the "starting-point" publication or later, it is necessary to choose lectotypes from the material that was at the disposal of the author who gave the name valid publication in the "starting-point" work or later (in the case of taxa of higher rank than species according to Article 9). Only if there is no material available that was at the disposal of the author giving the name valid publication, and there is no contradiction between his concept and that of the original author, may the material of the original author be chosen as lectotype.

Example: The species *Clavaria abietina* Persoon 1794 was revalidated by Fries 1821. Fries, however, described under this name a species different from the one described by Persoon. It is necessary to use this name in the sense in which it was used by Fries and to cite it as *Clavaria abietina* Fries."

Illegitimately ascribed authorship

Recommendation 23B. In those cases where an author ascribed in his work a new taxon (a new combination, a new name) to another author, this was done either with or without the consent of the other author (either by mistake or intentionally). We suggest that it should be explicitly ruled in what way these cases should be cited:

a) Obvious mistakes must be automatically corrected.

E x a m p l e: Nordstedt described in the work "Wittrock et Nordstedt, Alg. exsicc." under "No. 844" the new taxon *Closterium dianae* f. *rectius*. In 1889 De Toni ascribed this taxon to Lagerheim "in Wittr. et Nordst., Alg. exsicc. No. 844". From the whole citation it is obvious that there is a clear mistake with regard to the author's name, and the name "Lagerh." must be replaced by "Nordst.".

b) If the author of a publication states outright that he is publishing a new taxon (combination, name) with the consent of another author, it is cited according to Rec. 46B (the name of the author of the publication preceded by "in" is added).

E x a m p l e: Krieger (1935) published in his monograph as new *Closterium ehrenbergii* var. *atumidum* Grönbl., at the same time thanking Grönblad in the text for his consent to the publication of the new variety. Citation: *Closterium ehrenbergii* var. *atumidum* Grönbl. in Krieger 1935.

c) In cases when an author publishes a new taxon (combination, name) and quotes another author and not his own name, it is not certain whether he intended to ascribe the new taxon to the other author intentionally, whether he had received the other author's consent, whether he had only found somebody else's opinion in his papers, correspondence etc., or if the whole thing is a mistake.

E x a m p l e s: Krieger (1937) cited in his monograph *Euastrum binale* var. *gutwinskii* Schmidle, although Schmidle had published "f. *gutwinskii*" in 1894. — Also "*Closterium didymotocum* var. *glabrum* Borge" published by Krieger (1935) had actually been published originally as "*Closterium didymotocum* forma" (Anderson 1890). From the typographical arrangement of Anderson's work it is obvious, that the word "glabra" is only a component part of the description of an unnamed form and not a new epithet (Anderson later changed his name to "Borge"). In both cases it is not clear how Krieger arrived at these names for the taxa.

The authors of these suggestions differ in their opinions as to whether these controversial cases (sub c) should be corrected and ascribed to the author of the publication as obvious mistakes [see sub (a), i.e. *Euastrum binale* var. *gutwinskii* (Schmidle) Krieger, *Closterium didymotocum* var. *glabrum* Krieger], or cited in the way mentioned sub (b), i.e. by means of "in" [*Euastrum binale* var. *gutwinskii* (Schmidle) Schmidle in Krieger, *Closterium didymotocum* var. *glabrum* Borge in Krieger]. We suggest that either the first or the second way of citation should be prescribed.

229. If the f i r s t alternative of the case sub (c) is decided upon, we suggest inserting behind the first sentence of *Recommendation 46B:*

"This holds also in those cases where one author proposed a name and another published this name in his work with the original author's approval. Without this approval, however, only the author of the publication is cited. Obvious mistakes, however, must be corrected."

230. Should the s e c o n d alternative be approved:

"This holds also in those cases where one author published in his work a name that had been proposed by another author, or which he ascribed, either intentionally or by mistake, to another author. The author of the publication is always cited second. Only evident mistakes by the author of the publication are corrected."

We further suggest that as from 1 Jan. 1961 all ascriptions to other authors in cases where it is not stated that they had been made with their explicit approval will be considered invalid (see also Rec. 23B, lit. i).

231. We suggest that *paragraph (i)* of *Recommendation 23B* should be changed as follows:

"(i) not to use names found in any unpublished sources, as e.g. handwritten notes, correspondence, or on herbarium labels and to attribute them to their authors;"

Some of the Czechoslovak botanists, however, disagree with the inclusion of herbarium labels in the preceding formulation, insofar as a description is added. We therefore leave it to the nomenclatural commission of the Congress to reach a final decision on this point.

The connecting words between the names of authors

Articles 46-50. According to the Code (Arts. 46-50) it is necessary to cite with the Latin names of taxa the name of the author who

published and validly described the respective taxon. The Code does not contain clear rules with regard to the use of connecting words or of their abbreviations (et, in, ex, emendavit etc.) between the names of two or more authors connected with the same single taxon. We are of the opinion that a precise definition, unification and simplification of the rules would be of considerable value for the study of synonymy. We therefore propose that only the connecting words "et", "in", "ex", "sensu", and "emendavit" should be used, and with the following meanings:

et: when connecting the names of authors having the same relation to the cited name of a taxon.

232. We therefore propose that *Article 46* should be supplemented as follows:

"If two (or more) authors were equally concerned with the publication of a name, the names of both (or of the last two) are linked by means of the conjunction "et". If a taxon has been described by more than three authors, the first three authors are cited and "et al." is added."

ex: should be used in the case of any validation of a name not validly published according to the Code.

In the Code "ex" has been recommended in Rec. 46A, 50B and 50D. Rec. 46A and 50D deal with validation, Rec. 50B is, according to our opinion, a contradiction of Rec. 46B, and here the connecting word "in" should be used.

We therefore propose that:

233. *Recommendation 46A* should run as follows:

"When a name has been proposed but not validly published by one author and is subsequently validly published (validated) by another author, to whom the authorship of this taxon has been ascribed, then the name of the second author, who has validly published the name, should be added in the citation to the name of the original author by means of the connecting word "ex". This holds also for the validation of a name in "starting-point" works, for the names of taxa of garden origin with the authorship shown by the abbreviation "hort." etc. The citation of authors connected by means of "ex" may be abbreviated but then the name of the author who validly published the name (cited second) must be retained, as it is more important."

To be added to examples:

"*Anabaena* Bory ex Bornet et Flahault (starting-point), abbreviated: *Anabaena* Bornet et Flahault. — *Bankera fuligineo-alba* (Schmidt ex Fries) Coker et Biers ex Pouzar, abbreviated: *Bankera fuligineo-alba* (Fries) Pouzar."

234. To leave out *Recommendation 50B* altogether.

Motivation: The name proposed in the manuscript is not published at all (not even not validly) and its publication by another author is a publication de novo and not a validation. According to Rec. 46B it is necessary to use "in" in such cases (see below!). A name published as a synonym is not published validly (Art. 37).

235. To leave out *Recommendation 50D* altogether, and to decide clearly when square brackets should be used ("ex" to be reserved only for validation). The authors of these proposals are not unanimous in their opinion whether square brackets should be used at all:

a) On the one hand it is possible to take Article 49 as basis and use square brackets for a new combination with simultaneous validation of the name.

Example: Kützing (1845) described *Closterium laeve*. Ralfs (1848) transferred this species to *Tetmemorus* and validated it at the same time (starting-point). Citation: *Tetmemorus laevis* [Kütz.] Ralfs.

b) On the other hand square brackets may be omitted altogether from the citation of authors and the cited example may be written: *Tetmemorus laevis* (Kütz.) ex Ralfs.

236. We propose that it should be clearly decided which of the two mentioned possibilities should be adopted. If method (a) should be decided upon, it would be necessary to add after Article 49 a new *Recommendation 49A* as follows:

"If simultaneously with change of rank a taxon is validated, the original author is cited in square brackets. The citation may be abbreviated by leaving out the name of the original author (in brackets).

Example: *Agaricus* trib. *Amanita* [Pers.] Fr.

237. If (b) should be adopted, then *Recommendation 49A* should be changed as follows:

"If the rank of a taxon is changed when it is validated, the name of the validator is added after "ex" behind the name of the original author, which is enclosed in parentheses."

E x a m p l e: *Agaricus* trib. *Amanita* (Pers.) ex Fr.

We do not agree with the introduction of the new connecting word "per" recommended by Donk in the Taxon 6: 256. 1957 for the citation of names validated in the "starting-point" work.

i n: should be used only in the sense of *Recommendation 46B.*

238. We propose the supplementation of *Recommendation 46B* as follows:

"The citation of authors connected by means of "in" may be abbreviated, but in such cases it is necessary to retain the name of the author who supplied the name (it is cited first)."

We propose the following alterations and additions to the examples:

"E x a m p l e s: *Viburnum ternatum* Rehder in Sargent, abbreviated: *Viburnum ternatum* Rehder. — *Rhabdoderma lineare* Schmidle et Lauterb. in Schmidle, abbreviated: *Rhabdoderma lineare* Schmidle et Lauterb. — *Thelephora areolata* Chaillet in Fries, abbreviated *Thelephora areolata* Chaillet (although Fries's work is "starting-point", Chaillet's species was described here for the first time and not validated).

e m e n d. (= emendavit): may be used only for general taxonomic correction of an old, incorrectly described taxon, in cases where the correction concerns the original concept of the author, the original diagnosis is changed in important features and so are the diagnostic features which distinguish it from other taxa.

We consider a taxon as incorrectly described systematically if, from the point of view of the emendator, it is based upon erroneous features (e.g. the mistake of fatty droplets for fungous spores, Velenovský 1947) as, from the point of view of the emendator, there would be no specimen agreeing precisely with the original diagnosis.

It is necessary to limit the cases where "emendavit" is used to those where all the conditions mentioned above are simultaneously adhered to. Otherwise it would not be possible to distinguish them from mere complements of the diagnosis, the combining and separating of some species, etc. If carried to extremes, every smallest supplement to a diagnosis would then warrant treating as an emendation.

In the Code, Recommendation 47A deals with emendation, but only very vaguely. We suggest that here a suitable abbreviation (as e.g. "emendavit", "pro parte", "mutatis characteribus" and many others) should be recommended for the indication of the "nature of the change and the author responsible", if this change is "more important". We consider this subjective evaluation in the Code as untenable.

We therefore recommend:

239. That the text of *Recommendation 47A* should be altered altogether to run as follows:

"If the change mentioned in Article 47 applies to general correction of an old, incorrectly described taxon and is followed by an alteration of the original concept of the author, of the original diagnosis (in important features) and of the diagnostic features, the name of the author of the change is added to the original author by means of the abbreviation "emend." (= emendavit)."

E x a m p l e: In the year 1892 *Pteromonas cordiformis* Stein was described. The description is incomplete and cannot be used for the description of any single species of this genus. Stein's drawings include several types, out of which no iconotype was determined. In 1957 Fott changed and supplemented the original diagnosis, chose an iconotype corresponding to the species he was studying, and applied to this species Stein's original name. Citation: *Pteromonas* Stein emend. Fott."

240. That from *Article 48* the words "mutatis characteribus etc." should be omitted.

About the other abbreviations mentioned in Recommendation 47A see note below!

s e n s u: should be used in the case of a changed (later) concept of a taxon with exclusion of type.

This is actually the case of a mistake by a later author, who applied an old name to

specimens that are not taxonomically identical with the type (and thus change also the original diagnosis and content).

241. We suggest the inclusion in the Code of a new *Recommendation 47B* with the following wording:

"If the change mentioned in Article 47 was caused by a misinterpretation by the later author who applied the old name to specimens that are not systematically identical with the type, or if the same name was used later in several different concepts, and it is not certain which of them corresponds to the type, then to the name (of the original author) is added the name of the later author, (whose concept we have in mind), preceded by "sensu".

Example: In 1903 *Anabaena planctonica* Brunnth. was described. In 1920 G. M. Smith applied the same name (including the abbreviation of the author's name Brunnthaler) to the *Anabaena solitaria* f. *smithii* of today. To the synonymy of this form belongs "*Anabaena planctonica* Brunnth. sensu G. M. Smith, 1920."

About the use of the expressions "sensu stricto", "non sensu" etc. see note below!

Note: In the preceding text the connecting words that should be used only in citations between the authors of taxa have been discussed. The sense in which the various words should be used has also been defined. In addition, there exists a great number of Latin abbreviations which have the character of notes. Such notes are often used for complementing the citations of taxa. As an example we quote: ampl. (= amplificavit), auct. mult. (auctorum multorum), auct. non (auctorum, non . . .), corr. (correxit), excl. descr. (exclusive descriptio), excl. gen. (excluso genere, exclusis generibus), excl. spec. (exclusa specie, exclusis speciebus), excl. var. (exclusa varietate, exclusis varietatibus), incl. (inclusive), in litt. (in litteris), in mscr. (in manuscripto), in sched. (in schedis), mut. char. (mutatis characteribus), nom. amb. (nomen ambiguum), nom. cons. (nomen conservandum), nom. dub. (nomen dubium), nom. nud. (nomen nudum), non, nec, non sensu, p.p. (pro parte), pro syn. (pro synonynum), sec. (secundum), sensu ampl. (sensu ampliore), sensu latiore, sensu str. (sensu stricto), sensu orig. (sensu originali), teste etc.

There may be a great many similar expressions, and also short Latin sentences may be used. According to the Code some of them should be used obligatorily ("nom. cons."), others are only recommended. Their use may be generally welcomed, as they facilitate the study of synonymy considerably, but they must be lucid and concise. They belong, however, to a different category from the connecting words mentioned above, which are used only in a particular closely defined sense. They must always be put at the end of the respective citation (behind the year).

242. We therefore suggest the inclusion in the Code of a new *Recommendation 47C* as follows:

"If the change is not so important as to necessitate the complementing of the citation with the author's name (if it does not comply with the conditions as set down in Rec. 47A and 47B), it may be expressed by means of any suitable Latin abbreviation. This, however, is not a part of the citation itself, it serves only as a complementary note and is always put behind the complete citation.

Examples: *Trichodesmium* Ehrenb. ex Gom. Ann. Sci. Nat. Bot., ser. 7, 16: 193. 1893, nom. cons., sensu lato sec. Prescott; — *Enteromorpha* Link in Nees Hort. Phys. Berol. 5, 1820, nom. cons., p.p. — *Bartlingia* Brogn. Ann. Sci. Nat. 1, 10: 373. 1827, non Reichenb., nec F. Muell."

XXI. PROPOSALS FOR SOME CORRECTIONS

J. Dostál (Praha)

The International Code of Botanical Nomenclature is a book published for the purpose of helping botanists working in taxonomy to attain precision and clearness in designating plants by means of names, and in citing authors and their publications. It is therefore a primary requirement that this book should be outstanding in its precision, uniformity and clearness. Even though this need would seem obvious, it has not always been possible to satisfy it whilst elaborating such comprehensive and heterogenous material, because of the constant adjustments of the text and of the arrangement of the book, and of the short time available for the preparation of the manuscript. It is the indisputable merit of the secretary and of the editorial committee that the Paris edition of the Code

attained the state of perfection in which it has reached us. Nevertheless some mistakes appear in the text, which it would be easy to correct in the next edition.

While working at the Czech translation of the Code, I have come across several such mistakes, which, I suggest, should be corrected as follows:

243. To introduce a consistent uniformity of typographical arrangement of the text, as for example:

a) To print the names of taxa in italics, but on p. 17 the names of publications are printed in italics and the names of taxa in capitals. The same holds for Recommendation 50H, where the names are printed in capitals and the synonyms in italics. Nomina generica conservanda (App. III) are printed in half bold-faced type, which is correct for clearness' sake.

b) In some citations of botanical works the year of publication is printed in parentheses, and in others not (e.g. p. 303, para. (9)). Similarly with citations of complete names of publications, e.g. p. 31, Article 39, Example, and Article 34, Example.

c) Volumes or parts of works are cited either in parentheses (p. 303, last line at bottom of p.) or by a superscript figure (p. 304, 9th line from top) according to App. V, para. (6), but there should be uniformity in the book.

d) Parts of publications are mostly printed in half bold-faced type, but not so on p. 7.

244. *Article 29.* According to the second sentence of the first paragraph, publication is not effected by the issue of microfilm made from manuscripts, but in the "Note", a manuscript reproduced by microfilm is listed as an example of autographic reproduction, which, according to the second paragraph, is considered acceptable (before Jan. 1st 1953). So an indelible manuscript is acceptable, but the same manuscript reproduced from microfilm is not acceptable. And, finally, the second paragraph of the examples mentions manuscripts reproduced by lithography as an effective publication.

245. *Article 31.* Example .... Fungi exsiccati Suecici ....

246. *Article 32.* Example (2nd) .... Andropogon martinii Roxb. ....

247. *Article 41.* Note 2 and Article 43, Note, have exactly the same content which is unnecessarily included twice.

248. *Article 47.* An alteration of the diagnostic characters .... does not warrant the citation of the name of an author other than the one who first published its name — but in Recommendation 47A abbreviations are put in front of the name of the "second" author in a case of change of diagnostic characters (mutatis characteribus). — In "Examples" the name of the emending author is cited in the first case without, and in the second in parentheses.

249. *Article 52* .... must be (for one of them) reinstated.

250. *Article 55,* p. 39, 1st line on top Stschegl.

251. *Article 55,* para. 2 (p. 39): — from the text it is not clear whether it is possible to attribute a new combination to an author who had published it by mistake, or whether this combination must be reserved for the author who first publishes it correctly. In the example the author of the transference is cited "Carr.", i.e. according to the second explanation, but this is nonsensical if this author did not have the mentioned species in mind (cf. Art. 63!). If this explanation is identical with the original opinion of the author, then it is necessary to suggest in these "proposals" an alteration of this paragraph.

252. *Article 67.* It will be necessary to define precisely the term "monstrosity" and to exclude from it numerical floral anomalies etc. (see *Galinsoga quadriradiata*).

253. *Article 73.* It is necessary to specify the meaning of "original spelling" (see Rickett Taxon 4: 185-188, 1955).

254. *Recommendation 75A,* p. 50, para. 2: does the ending *-carpha* belong here?

255. III. *Chrysophyta* are erroneously mentioned twice.

256. p. 211: *Urocystis* — there is a type for *Tuburcina: "Rhizoctonia"* missing.

257. p. 213: to rearrange the alphabetic order *Thamnolia, Thelopsis, Tholurna.*

258. p. 251-252: to rearrange the order: 4472, 4498 p.p. *Tithymalus,* 4501, 4516.

XXII. NOTES ON THE PROPOSAL FOR A STABILIZATION OF THE NAMES OF FAMILIES

J. Dostál (Praha)

Botanical taxonomic nomenclature has, in my opinion, three fundamental aims:

1) To become a technical means of understanding between taxonomists.

2) To make possible the avoidance of ambiguity of taxonomic names.

3) To stabilize botanic nomenclature.

4) To preserve and stabilize the nomenclature now mostly used, and, on the other hand,

5) To legitimise the exhumation of forgotten names.

The Rules valid at present have, during the last decades, become a complicated Code full of traps, exceptions and conditions, so that instead of being a technical expedient, they have become a self-contained formal science. This, of course, is the reason why such a great number of botanists are not inclined to keep to the Rules, even if they admit their necessity. To gain for the Rules the greatest possible acceptance among botanists, and, no doubt, this is their aim, it will be necessary to adjust the Rules gradually, so as to make them:

a) As simple and comprehensible as possible, making possible a quick orientation with regard to nomenclatural problems.

b) Such that the nomenclature of taxa decided upon by the Rules should tax the memory of the taxonomists as little as possible and require little mental work, as the taxonomist's full interest must be devoted to taxonomic problems, and he must not be troubled with the difficult solution of nomenclatural problems.

It will therefore be necessary to stabilize through typification and conservation the greatest possible number of names of species and genera, especially in the case of useful plants and of nomenclatural types, and it will be necessary to make automatic the nomenclature of taxa above the rank of genus (through standardization of nomenclatural types and through consistent derivation of names of taxa above the rank of genus from the correct name of the nomenclatural standard).

At this point I should like to discuss the proposal put forward by Mr. A. A. Bullock, whose very meritorious and very carefully compiled list of the families of *Spermatophyta* is the basis for the nomenclature of this group.

I warmly agree with the reasons for the discussion of the names of families, but, in my opinion, one cannot accept the continued authorisation of the exceptions to Article 18 of the Code only because we have been used to using some names formed in a different way.

Just as in the case of taxa of lower rank it is necessary to cite the author when giving precise names to families, as in this taxonomic rank a different breadth of the "family" is more frequent than is the case with taxa of the rank of species or genus. From this precise designation the character of the family will be clearly visible (through the name derived from the name of the standard) and also their range (through the author's name). Only within the frame work of a certain character and range is it possible to consider priority of name, and it will therefore be necessary to accept as starting-point only such a basic work as will make it possible to give a precise circumscription to the family by containing all genera of the world's flora. There are, indisputably, only three works of this kind: Bentham and Hooker's Genera Plantarum, the Pflanzenfamilien, and Dalla-Torre et Harms Genera Siphonogamarum (this last one only for *Spermatophyta*). As these authors accepted comparatively large families, their names will be valid only for such large concepts, and later changes with regard to range of family will have to be denoted by means of the name of the respective author. I consider it superfluous to use in such a case long and complicated nomenclatural formulae, as for example *Saxifragaceae* [(A. L. Jussieu "*Saxifrageae*",) D.C. in Lam.] emend. Tachtadž. to indicate that, because of its ending, Jussieu's name did not accord with Article 18, but his concept of the family is much larger than Tachtadžian's. To avoid such complicated nomenclature, but to state also the precise range of the family at the same time, there is no other solution than that suggested by A. A. Bullock: to issue a complete list of families, in which, however, contrary to his proposal, also the names of the authors

of the various ranges of concept of each family will be included (insofar as they can be precisely derived from the cited work).

The names of families have not been formed uniformly and I have not been able to propagate with sufficient energy the forming of names of families by one single method, from the standard names, in the sense of the proposal of Ponce de Leon and Alvarez (Taxon 2: 96. 1953, 3: 53. 1954). In this way full automatization will be achieved with regard to names of families, and the unnecessary burden on the memory of taxonomists will be removed. Today it may seem impossible to replace customary names like *Cruciferae, Compositae, Labiatae* etc. I am, however, convinced that it is a matter of only a few years before names formed in full accord with the rules will be fully accepted.

In the first edition of my book "The Flora of Czechoslovakia (Dostál: Květena Čsr. 1948-1950) I consistently used names of families derived from the valid name of the standard — and in five years these names had been accepted by a majority of botanists in Czechoslovakia, and the younger generation no longer uses the traditional names even in colloquial language. The only objection was made by pedagogues, who quite rightly pointed out that the czechisized names of the largest families were not suitable for practical teaching (*Asteraceae, Amiaceae*), because they were derived from little known genera. It would therefore be necessary in the above-mentioned list to determine also standards for the names of families in the sense of the proposal worked out by Sprague (1926), i.e. to use as standards for the names of families only the correct names of the most widespread genera whose character is most in keeping with the character of the families, and simultaneously to carry out the standardization of this generic name (to avoid in future the occurrence of such confusion as occurs in the case of *Fabaceae* versus *Viciaceae*).

With regard to endings it is today an accepted presumption that the ending *-aceae* should be added to the grammatical stem of the standard name. Old names formed by a different method should no longer be used, and, insofar as it is necessary to cite their authors, a method of citation should be decided upon, e.g. *Sparganiaceae* C. H. Schulz 1832 corr. J. G. Agardh. 1858, or by some other suitable method.

I think that today, after the very meritorious publication of a register of genera, it will be possible to suggest a complete list of families of all classes of plants, and so to introduce order into this branch. I am convinced that the new names formed in accordance with the rules (i.e. not necessitating any exceptions) will be fully accepted very soon, and in a few years those unsuitable names will be eliminated just as the names of orders not in accordance with the rules have been (*Contortae, Parietales, Scitaminae* etc.).

I therefore suggest that:

259. *Article 18* should be retained, but the words "or of a synonym of this name, even if illegitimate" should be omitted, and the whole Note 2 should be deleted. Also:

260. *Article 19* should be retained, but the words "or of a synonym" should be omitted.

It cannot be expected than any proposal aiming at the normalization of names of families will be accepted without any objection, as on this point more than anywhere else conservatism and custom will prevail, leading to objections to the stabilization of some still unusual names.

I should like to add to the list of names of families, contained in A. A. Bullock's proposal, the following notes and supplements:

261. I suggest the inclusion among nomina rejicienda proposita of (besides A. A. Bullock's proposal) the following families, because their names have not been derived from correct standard names:

Abaminaceae J. G. Agardh 1858. — T. *Narthecium.*
Acornaceae Link 1829. — T. *Atractylis.*
Alsinaceae Lam. et DC. 1805. — T. *Arenaria.*
Alsodieaceae J. G. Agardh 1858. — T. *Rinorea.*
Aurantiaceae A. L. Juss. 1789. — T. *Citrus.*
Balsaminaceae DC. 1824. — T. *Impatiens.*
Barreriaceae Martius 1835. — T. *Poraqueiba.*
Botryodendraceae J. G. Agardh 1858. — T. *Meryta.*
Buchlandiaceae J. G. Agardh 1858. — T. *Exbucklandia.*
Buglossaceae Hoffms. et Link 1809. — T. *Anchusa.*

Cactaceae A. L. Juss. 1789. — T. *Mammillaria.*
Caprifoliaceae A. L. Juss. 1789. — T. *Lonicera.*
Cardiopteridaceae Blume 1847. — T. *Pripterigium.*
Caryophyllaceae A. L. Juss. 1789. — T. *Dianthus.*
Castaneaceae Link 1821. — T. *Aesculus.*
Chailletiaceae R. Brown 1818. — T. *Dichapetalum.*
Compositae Gaertn. 1791. — T. *Aster.*
Cruciferae A. L. Juss. 1789. — T. *Brassica.*
Dulongiaceae J. G. Agardh 1858. — T. *Phyllonoma.*
Fabaceae H. G. L. Rchb. — T. *Vicia* (*sativa*).
Ficoidaceae A. L. Juss. 1789. — T. *Aizoon.*
Fremontiaceae A. G. Agardh 1858. — T. *Fremontodendron.*
Gramineae A. L. Juss. 1789. — T. *Poa.*
Grossulariaceae Lam. et DC. — T. *Ribes.*
Guttiferae A. L. Juss. 1789. — T. *Clusia.*
Henslowiaceae Lindley 1836. — T. *Crypteronia.*
Hewardiaceae Nakai 1943. — T. *Isophysis.*
Himantandraceae Diels 1917. — T. *Galbulimima* (insofar as the hitherto more frequently used name *Himantandra* F. Muell. ex Diels is not protected).
Labiatae A. L. Juss. 1789. — T. *Lamium.*
Ledocarpaceae Leyer 1834. — T. *Balbisia.*
Leguminosae A. L. Juss. 1789. — T. *Vicia.*
Lentibulariaceae L. C. Rich. 1808. — T. *Utricularia.*
Lippayaceae Meisner 1836-1843. — T. *Dentella.*
Lowiaceae Ridley 1924. — T. *Orchidantha.*
Lupulaceae Link 1831. — T. *Humulus.*
Malachodendraceae J. G. Agardh 1858. — T. *Stuartia.*
Nhandirobaceae A. St. Hilaire 1822. — T. *Fevillea.*
Nyctaginaceae A. L. Juss. 1789. — T. *Mirabilis.*
Ochranthaceae (Lindl. 1836). — T. *Turpinia.*
Onagraceae A. L. Juss. 1789. — T. *Oenothera.*
Oporanthaceae Salisbury 1866. — T. *Sternbergia.*
Palmae A. L. Juss. 1789. — T. *Areca.*
Papilionaceae R. Br. 1814. — T. *Vicia.*
Patrisiaceae Martius 1835. — T. *Ryania.*
Podoaceae Franchet 1889. — T. *Dobinea.*
Proteaceae A. L. Juss. 1789. — T. *Leucadendron.*
Pyrolaceae → *Pirolaceae.*
Roxburghiaceae Wallich 1832. — T. *Stemona.*
Sagaceae C. H. Schulz 1832. — T. *Metroxylon.*
Sapotaceae A. L. Juss. 1789. — T. *Achras.*
Scepaceae Lindl. 1836. — T. *Aporosa.*
Spielmanniaceae J. G. Agardh 1858. — T. *Oftia.*
Staticaceae S. F. Gray 1821. — T. *Limonium.*
Stilaginaceae C. A. Agardh 1825. — T. *Antidesma.*
Themidaceae Salisbury 1866. — T. *Brodiaea.*
Treubellaceae van Tighem 1897. — T. *Treubana.*
Ulmariaceae S. F. Gray 1821. — T. *Spiraea.*
Umbelliferae A. L. Juss. 1789. — T. *Apium.*
Winteraceae Lindley 1836. — T. *Pseudowintera.*

To retain this name, or even to conserve it, would mean that botanists would have to remember in which family the name has been derived from the valid name of the nomenclatural type, and in which case it has been derived from a synonym, which I consider absolutely unnecessary for botanical science.

262. A. A. Bullock's list contains many names of families that are to be included in the list of nomina rejicienda, or are to be considered illegitimate. Insofar as these names have been derived from their nomenclatural type, I do not think it correct to propose their elimination, even if they were published later than the names of the same families derived from synonyms of their nomenclatural types, or formed by other methods. They are:

Achraceae Roberty 1953. — T. *Achras* L. — vs. *Sapotaceae* A. L. Juss. 1789.
Aizoaceae J. G. Agardh 1858. — T. *Aizoon* L. — vs. *Ficoidaceae* A. L. Juss. 1789.
Antidesmaceae Endlicher 1837. — T. *Antidesma* L. — vs. *Stilaginaceae* C. A. Agardh 1825. — T. *Antidesma* L. (= *Stilago* L., non Salisbury).
Citraceae Drude in Schenk 1887. — T. *Citrus* L. — vs. *Aurantiaceae* A. L. Juss. 1789.
Crypteroniaceae A. DC. 1868. — T. *Crypteronia* Blume — vs. *Henslowiaceae* Lindley 1836.
Daucaceae Dostál 1949. — T. *Daucus* L. — The name of this family, hitherto currently named *Umbelliferae*, has a very varied nomenclature as to the name derived from

the standard. The International Code (1952) App. VA lists the name *Ammiaceae* according to V. H. Camp's proposal: Syn. Propos. Stockholm; the probable author of this name is C. B. Presl, and the standard is Ammi L. — A. A. Bullock's proposal mentions *Apiaceae* Lindl. 1836, based upon the standard Apium L. — I do not think it right that the small, and rather little known genus *Ammi* should be the nomenclatural type for one of the most widely spread families. The name *Apiaceae* formed as early as 1836 and used in "Pflanzenfamilien" (3/8 : 63) by Drude as the first synonym, is, indisputably, more fitting. If, however, a standardization of the names of families should be undertaken, then I suggest (because of the present inconstancy) the name *Daucaceae* with the type *Daucus* L., as this genus is very numerous, widely spread (also secondarily) all over the world (perhaps with the exception of South-America), it is commonly known all over the world as u useful plant, it has all the characteristic features of the family and has no other properties that might cause its separation into a self-contained family in future. Even though nomenclature should be governed by no other considerations than priority and validity of publication, I am of the opinion that, in the case of current names and widely spread families included in the curriculum taught in schools, we must consider also the practical use of the names of families, so as to achieve the greatest possible recognition of the Rules of nomenclature. For these reasons I consider it unnecessary to look for a new, common, suitable name for this family.

Dichapetalaceae Baillon in Martius 1883. — T. *Dichapetalum* Thouars — vs. *Chailletiaceae* R. Br. in Tuckey 1818.

Fevilleaceae L. Pfeiffer 1870. — T. *Fevillea* L. — vs. *Nhandirobaceae* A. St. Hil. 1822.

Impatientaceae Dostál 1949. — T. *Impatiens* L. — vs. *Balsaminaceae* DC. 1824.

Loniceraceae Horaninow 1847. — T. *Lonicera* L. — vs. *Caprifoliaceae* A. L. Juss. 1789.

Oenotheraceae J. G. Agardh 1858. — T. *Oenothera* L. — vs. *Onagraceae* A. L. Juss. 1789.

Opuntiaceae A. Juss. 1825. — T. *Opuntia* L. — vs. *Cactaceae* A. L. Juss. 1789. — T. *Mammillaria* Haw. nom. cons. vers. *Cactus* L.

Peripterygiaceae F. N. Williams 1905. — T. *Peripterygium* Hasskarl — vs. *Cardiopteridaceae* Blume 1847.

Pirolaceae vs. *Pyrolaceae*.

Ribesaceae A. Rich. 1823. — T. *Ribes* L. (*rubrum*) — vs. *Grossulariaceae* Lam. et DC. 1805.

Stellariaceae Dum. 1829. — T. *Stellaria* L. — vs. *Alsinaceae* Lam. et DC. 1805. — T. *Arenaria* L. (syn. *Alsine* Scop., non Wahlenbg. quod est *Minuartia* L.).

Stemonaceae Franchet et Savatier 1879. — T. *Stemona* Loureiro — vs. *Roxburghiaceae* Wallich 1832.

Utriculariaceae Hoffmansegg et Link 1809. — T. *Utricularia* L. — vs. *Lentibulariaceae* L. C. Rich. 1808.

Viciaceae Dostál 1948. — T. *Vicia* L. (*sativa*) — vs. *Fabaceae* H. G. L. Rchb. 1828, et vs. *Leguminosae* A. L. Juss. 1789, et vs. *Papilionaceae* R. Br. 1814.

NEW COMBINATIONS IN MOSSES I

R. van der Wijk et W. D. Margadant (Groningen)

In compiling the Index Muscorum [1]) the authors discovered that many names of mosses were invalid or illegitimate. In most cases these names should be replaced by new combinations. However, the authors are of the opinion that the publication of new names should be limited to those cases where it is necessary to cite the new name in synonymy elsewhere in the Index.

The reason why these new combinations are published here in advance is that Art. 32 of the Code states that a new combination published after 1 Jan. 1935 is only validly published if it is accompanied by a full

1) The "Index Muscorum" is aided by grants from the Netherlands Organisation of Pure Scientific Research (Z.W.O.) in the Hague and by the National Science Foundation in Washington.

reference to the author and original publication of the basionym. The sequence of names in the Index Muscorum is such that these references are not published simultaneously with a new combination, and the requirements of Art. 32 would not be fulfilled.

In the following alphabetical list are given the new combinations that were necessary in the genera beginning with the letters A and B up to the genus Bryum. Further lists will be published as soon as they are prepared.

Acroporium rufum (Reinw. et Hornsch.) Fleisch. var. *falcatulum* (Fleisch.) Wijk et Marg.

Basionym: *Acroporium braunii* (C. Muell.) Fleisch. var. *falcatulum* Fleisch. Musci Fl. Buitenzorg 4: 1280. 1923.

cf. Fleisch. Musci Fl. Buitenzorg 4: 1672. 1923.

Amblystegium juratzkanum Schimp. var. *salicinum* (Velen.) Wijk et Marg.

Basionym: *A. radicale* B.S.G. var. *salicinum* Velen. Rozpravy Cesk. Ak. Ved. Tr. 2, 9(28): 10. 1900.

Amblystegium juratzkanum Schimp. var. *serotinum* (Lindb.) Wijk et Marg.

Basionym: *Hypnum serpens* Hedw. var. *serotinum* Lindb. in Hartm. Handb. Skand. Fl. ed. 9, 2: 12. 1864.

Amblystegium juratzkanum Schimp. var. *sudeticum* (Velen.) Wijk et Marg.

Basionym: *A. radicale* B.S.G. var. *sudeticum* Velen. Rozpravy Cesk. Ak. Ved. Tr. 2, 9(28): 10. 1900.

cf. *A. serpens* (Hedw.) B.S.G. var. *sudeticum* (Velen.) Podp. Consp. 566. 1954.

Anisothecium schreberianum (Hedw.) Dix. var. *elatum* (Schimp.) Wijk et Marg.

Basionym: *Dicranella schreberi* Schimp. var. *elatum* Schimp. Syn. ed. 2: 72. 1876.

Anisothecium vaginale Loesk. var. *atlanticum* (C. Jens.) Wijk et Marg.

Basionym: *Anisothecium crispum* Lindb. var. *atlanticum* C. Jens. Bot. Faeröes Dan. Invest. 1: 161. 1900.

cf. Podp. Consp. 116. 1954.

Anoectangium aestivum (Hedw.) Mitt. var. *glaciale* (Lor. et Mol.) Wijk et Marg.

Basionym: *Anoectangium compactum* Schwaegr. var. *glaciale* Lor. et Mol. Moosstud. 83. 1864.

cf. Podp. Consp. 167. 1954.

Anoectangium stracheyanum Mitt. var. *gymnostomoides* (Broth. et Yas.) Wijk et Marg.

Basionym: *Anoectangium gymnostomoides* Broth. et Yas. Bot. Mag. Tokyo 29: 150. 1915.

Notes: *Anoectangium tortifolium* Wils. Kew J. of Bot. 9: 326. 1857 nom. nud. *Anoectangium tortifolium* Par. Ind. Bryol. 41: 1894 nom. illeg. incl. spec. prior. *A. stracheyanum* Mitt.

Astomum crispum (Hedw.) Hamp. var. *philibertii* (Husn.) Wijk et Marg.

Basionym: *Systegium crispum* (Hedw.) Schimp. var. *philibertii* Husn. Musc. Gall. 427. 1894.

cf. Podp. Consp. 184. 1954.

Atrichum chlorochaete (Card.) Wijk et Marg.

Basionym: *Catharinea chlorochaete* Card. Bull. Soc. Bot. Genève ser. 2, 1: 130. 1909.

Atrichum giganteum (Hor.) Wijk et Marg.

Basionym: *Catharinea gigantea* Hor. Bot. Mag. Tokyo 50: 559. 37. 1936.

Atrichum kinashii (Card.) Wijk et Marg.

Basionym: *Catharinea kinashii* Card. Bull. Soc. Bot. Genève ser. 2, 1(3): 129. 1909.

Atrichum spinulosum (Card.) Wijk et Marg.

Basionym: *Catharinea spinulosa* Card. Bull. Soc. Bot. Genève ser. 2, 1(3): 130. 1909.

Atrichum xanthopodum (Card.) Wijk et Marg.

Basionym: *Catharinea xanthopoda* Card. Bull. Soc. Bot. Genève ser. 2, 1(3): 130. 1909.

Atrichum yakushimense (Hor.) Wijk et Marg.

Basionym: *Catharinea yakushimensis* Hor. Bot. Mag. Tokyo 50: 560. 38. 1936.

Atrichum yuennanense (Broth.) Bartr. var. *minus* (Broth.) Wijk et Marg.

Basionym: *Catharinea yuennanensis* Broth. var. *minor* Broth. Symb. Sin. 4: 132. 1929.

Aulacomnium palustre (Hedw.) Schwaegr. var. *andinum* (Herz.) Wijk et Marg.

Basionym: *Aulacomnium marginatum* (Aongstr.) Jaeg. var. *andinum* Herz. Beih. Bot. Centralbl. 27(2): 356. 1910.

cf. Herz. Biblioth. Bot. 87: 90. 1916.

Barbula asperifolia Mitt. var. *gracilis* (Amann et Meyl.) Wijk et Marg.

Basionym: *Barbula rufa* (Lor.) Jur. var. *gracilis* Amann et Meyl. Fl. Mouss. Suiss. 2: 102. 1919.

[non Barbula rufa Schimp.].

Barbula asperifolia Mitt. var. *grauhauptiana* (De Not.) Wijk et Marg.

Basionym: *Didymodon rufus* Lor. var. *grauhauptianus* De Not. Atti R. Univ. Genova 1: 566. 1869.

Barbula asperifolia Mitt. var. *kneuckeri* (Loesk. et Osterw.) Wijk et Marg.

Basionym: *Barbula kneuckeri* Loesk. et Osterw. Verh. Bot. Ver. Brandenburg 49: 45. 1907.

cf. *Barbula rufa* (Lor.) Jur. var. *kneuckeri* (Loesk. et Osterw.) Weim. 1937.

Barbula asperifolia Mitt. var. *spitsbergensis* (Jones) Wijk et Marg.

Basionym: *Didymodon spitsbergensis* Dix. ex Jones, Rev. Bryol. Lich. 20: 122. *1.* 1951.

cf. *Barbula rufa* (Lor.) Jur. var. *spitsbergensis* (Jones) Podp. Consp. 211. 1954.

Barbula flaviseta (Herz.) Wijk et Marg.

Basionym: *Asteriscium flavisetum* Herz. Rep. Spec. Nov. Regn. Veg. 55: 18. *11.* 1952.

Bartramidula bartramioides (Griff.) Wijk et Marg.

Basionym: *Weisia bartramioides* Griff. Calcutta J. Nat. Hist. 2: 489. 1842.

Braunfelsia edentula (Mitt.) Wijk et Marg.

Basionym: *Dicranum edentulum* Mitt. J. Linn. Soc. Bot. Suppl. 1: 14. 1859.

cf. *Dicranum scariosum* Wils. Kew Journ. Bot. 9: 294. 1857 nom. nud.

Breutelia kerguelensis (Par.) Wijk et Marg.

Basionym: *Philonotis kerguelensis* Par. Ind. Bryol. 106. 1894 [*Bartramia graminicola* C. Muell. Bot. Jahrb. 5: 79. 1883 hom. illeg. non C. Muell. 1874].

Cirriphyllum cirrhosum (Schwaegr.) Grout var. *gracillimum* (Mol.) Wijk et Marg.

Basionym: *Brachythecium cirrhosum* (Schwaegr.) Schimp. var. *gracillimum* Mol. Ber. Naturh. Ver. Augsburg 18: 169. 1865.

Cratoneuron filicinum (Hedw.) Roth. var. *filiforme* (Par.) Wijk et Marg.

Basionym: *Amblystegium filicinum* (Hedw.) De Not. var. *filiforme* Par. Ind. Bryol. ed. 2, 1: 18. 1903.

Cratoneuron filicinum (Hedw.) Roth var. *nigricans* (Saut.) Wijk et Marg.

Basionym: *Amblystegium fallax* (Brid.) Milde var. *nigricans* Saut. Fl. Herzogth. Salzb. 3: 67. 1870.

cf. Podp. Consp. 552. 1954. [*Cratoneuron filicinum* (Hedw.) Roth var. *verrucosum* Dietzow].

Didymodon rigidulus Hedw. var. *campicola* (Broth.) Wijk et Marg.

Basionym: *Barbula rigidula* (Hedw.) Mild. var. *campicola* Broth. in Fedchenko, Fl. As. Ross. 13: 176. 1918.

Didymodon rigidulus Hedw. var. *glaucus* (Ryan) Wijk et Marg.

Basionym: *Didymodon glaucus* Ryan, Rev. Bryol. 28: 39. 1901.

cf. Podp. Consp. 204. 1954.

Didymodon tophaceus (Brid.) Garov. var. *excurrens* (Broth.) Wijk et Marg.

Basionym: *Barbula excurrens* Broth. Bot. Centralbl. 34: 26. 1888.

cf. Podp. Consp. 202. 1954.

Didymodon trifarius (Hedw.) Roehl. var. *angustifolius* (Warnst.) Wijk et Marg.

Basionym: *Didymodon angustifolius* Warnst. Beih. Bot. Centralbl. 16: 239. *10 f. 1.* 1904.

Didymodon trifarius (Hedw.) Roehl. var. *cuspidatus* (Schimp.) Wijk et Marg.

Basionym: *Didymodon luridus* Hornsch. var. *cuspidatus* Schimp. Syn. ed. 2: 162. 1876.

Didymodon trifarius (Hedw.) Roehl. var. *intermedius* (Ruth.) Wijk et Marg.

Basionym: *Trichostomum luridum* (Hornsch.) Spruc. var. *intermedium* Ruth. in Warnst. Verh. Bot. Ver. Brandenburg 27: 40. 1885.

Didymodon trifarius (Hedw.) Roehl. var. *krimensis* (Warnst.) Wijk et Marg.

Basionym: *Didymodon krimensis* Warnst. Hedwigia 54: 179. 1913.

Didymodon trifarius (Hedw.) Roehl. ssp. *nicholsonii* (Culm.) Wijk et Marg.

Basionym: *Barbula nicholsonii* Culm. Rev. Bryol. 34: 100. 1907.

Hydrogonium arcuatum (Griff.) Wijk et Marg.

Basionym: *Barbula arcuata* Griff. Calcutta J. Nat. Hist. 2: 491. 1842.

Hydrogonium ehrenbergii (Lor.) Jaeg. var. *algeriae* (C. Muell.) Wijk et Marg.

Basionym: *Trichostomum mediterraneum* C. Muell. var. *algeriae* C. Muell. Rev. Bryol. 6: 33. 1879.

Hygroamblystegium tenax (Hedw.) Jenn. ssp. *orthocladon* (P. Beauv.) Wijk et Marg.

Basionym: *Hypnum orthocladon* P. Beauv. Prodr. 67. 1805.

cf. *Hygroamblystegium irriguum* (Wils.) Loesk. ssp. *orthocladon* (P. Beauv.) Grout, Moss Fl. N. Am. 3: 73. 1931.

Hygrohypnum luridum (Hedw.) Jenn. var. *ehlei* (Arn.) Wijk et Marg.

Basionym: *Amblystegium ehlei* Arn. Ark. f. Bot. 13(2): 74. *3 f. 46-54.* 1913.

Philonotis longiseta (Michx.) Britt. var. *plumulosa* (Ren. et Card.) Wijk et Marg.

Basionym: *Bartramia radicalis* P. Beauv. var. *plumulosa* Ren. et Card. Bull. Soc. R. Bot. Belg. 29(1): 177. 1890.

Tortula Hedw. sect. *Bulbibarbula* (C. Muell.) Wijk et Marg.

Basionym: *Barbula* Hedw. sect. *Bulbibarbula* C. Muell. Flora 62: 379. 1879.

Tortula hildebrandtii (C. Muell.) Broth. var. *papillosa* (Broth.) Wijk et Marg.

Basionym: *Tortula meruensis* (C. Muell.) Broth. var. *papillosa* Broth. Bot. Jahrb. 20: 184. 1894.

Tortula intermedia (Brid.) De Not. var. *calva* (Dur. et Sag.) Wijk et Marg.

Basionym: *Barbula ruralis* Hedw. var. *calva* Dur. et Sag. in B.S.G. Bryol. Eur. 2: 113. *167*. 1851. (fasc. 46-47 Mon. Suppl. 3: 1. 3.).

NEWS AND NOTES

GENERAL COMMITTEE

The attention of the members of the General Committee for Botanical Nomenclature is drawn to the report on the conservation of generic names in Spermatophyta published in Taxon 7(7):184-193. 1958. They are kindley requested to study these proposals and to send their comments and votes to the International Bureau before 1 February 1959. Botanists who are opposed to the conservation of one or more of the proposed names are invited to send their arguments to the General Committee (c/o the International Bureau) before 1 January 1959. All names adopted by the General Committee on 1 February 1959 will fall under the provisions of Article 15 of the International Code of Botanical Nomenclature, i.e. botanists will then be authorized to retain them pending the decision of the IXth International Botanical Congress.

BACTERIOLOGICAL CODE

International Code of Nomenclature of Bacteria and Viruses (Bacteriological Code). Edited by the Editorial Board of the International Committee on Bacteriological Nomenclature. Approved by:

The Judicial Commission of the International Committee on Bacteriological Nomenclature

The International Committee on Bacteriological Nomenclature

The International Association of Microbiological Societies

The Plenary Session of the VI International Congress of Microbiology, Rome, Italy, September 1953.

Published: June 1958, by the Iowa State College Press, Press Building, Ames, Iowa, USA.

Price: $ 3.50.

The senior editor of this revised Bacteriological Code is Dr R. E. Buchanan, dean emeritus of Iowa State College, Ames, Iowa. His collaborators in the Editorial Board are: Dr. W. A. Clark (Washington), Dr. S. T. Cowan (London) and Dr. T. Wiken (Zürich).

Each principle, rule or recommendation is followed by one or more very useful "annotations" giving notes on the history of that particular provision, on the corresponding statements in the Botanical Code and the Zoological Rules, etc.

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the Life Sciences is January 15, 1959. Proposals received prior to that date will be reviewed at the Spring meetings of the Foundation's Advisory Panels and disposition will be made approximately four months following the closing date. Proposals received after the January 15, 1959, closing date will be reviewed following the Spring closing date of May 15, 1959.

Inquiries should be addressed to the National Science Foundation, Washington 25, D.C.

ANNALS OF THE ROYAL BOTANIC GARDEN, CALCUTTA

A few complete sets of the *Annals of the Royal Botanic Garden, Calcutta* are for sale at the original prices. Sets will be sold only to Botanical Institutes who are anxious to obtain a complete series of this periodical. Applications should be made directly to The Superintendent, Indian Botanic Garden, Howran, Calcutta, India.

NATIONAL HERBARIUM OF PAKISTAN

In preparation for the establishment of a National Herbarium, the Pakistan Ministry of Agriculture has formed the Pakistan National Herbarium Unit, attached to the Pakistan Forest College & Research Institute. The unit is located at the new Forest College buildings at the University of Peshawar and has as its nucleus the herbaria of the Forest Botany and Medicinal Plants branches of the Forest Research Institute. A committee of taxonomists in Pakistan is being formed to advise on scientific policy and to ensure coordination with work in progress in the universities and elsewhere.

The herbarium will naturally concentrate on the flora of Pakistan, but in order to do this effectively a representation of the plants of all neighbouring, and some distant, countries will be needed. For instance, the occurrence of a large number of widespread temperate species in W. Pakistan makes an adequate representaton of the European flora essential. Similarly, Burmese, Thailand and Malayan plants will be needed for comparison with E. Pakistan species. To both the whole Indian flora is vital. Exchange arrangements with other herbaria will therefore be welcome.

The available library is but a beginning, and reprints of articles, especially those relevant to the flora of Pakistan, will be gratefully received. Initially the work of the Unit will be supervised by Mr. B. L. Burtt of the Royal Botanic Garden, Edinburgh, who is on loan to the Government of Pakistan as Systematic Botanist under Colombo Plan arrangements.

The address of the Unit is: Pakistan National Herbarium Unit, c/o Forest College & Research Institute, University of Peshawar, Peshawar, West Pakistan.

AMERICAN JOURNAL OF BOTANY

Harold C. Bold, Professor of botany at the University of Texas, will succeed Harry J. Fuller as editor-in-chief of the *American Journal of Botany*. Harriet B. Creighton of Wellesley College will succeed Fuller on the *Plant Science Bulletin* of which the latter has been editor since its founding.

LEHRBUCH DER BOTANIK

Lehrbuch der Botanik für Hochschulen, begründet von E. Strasburger, F. Noll, H. Schenck und A. F. W. Schimper, 27. Auflage, neubearbeitet von Richard Harder (Göttingen), Franz Firbas (Göttingen), Walter Schumacher (Bonn), Dietrich von Denffer (Giessen). Mit 952 zum Teil farbigen Abbildungen im Text und 1 farbigen Karte. — Gustav Fischer Verlag, Stuttgart, 1958.

Niedere Pflanzen: (1.-16. Auflage 1894-1923 von Heinrich Schenck) 17.-27. Auflage 1928-1958 von Richard Harder.

Samenpflanzen: (1.-5. Auflage 1894-1901 von A. F. W. Schimper, 6.-19. Auflage 1904-1936 von George Karsten) 20.-27. Auflage 1939-1958 von Franz Firbas.

Pflanzengeographie: 20.-27. Auflage 1939-1958 von Franz Firbas.

BIBLIOGRAPHY OF E. ASIATIC BOTANY

The preparation of a Supplement to the "Bibliography of Eastern Asiatic Botany" by Elmer D. Merrill and Egbert H. Walker, published in 1938 by the Arnold Arboretum, is the objective of a project undertaken by the American Institute of Biological Sciences under contract with the National Science Foundation. The junior author of the original work has been granted a year's leave-of-absence from the Department of Botany of the Smithsonian Institution to enable him to carry out this work. The same high standards established by the senior author, who initiated this most successful regional bibliography in 1929, will be maintained. Plans are being made to increase the usefulness of the Supplement to the oriental workers by giving the Chinese and Japanese titles in the original characters as well as in translation. Much cooperation was offered by the Japanese botanists in Tokyo. They learned of the plans for this project from Dr. Walker last October, when he attended there the annual meeting of the Botanical Society of Japan and the meeting commemorating its 75th anniversary. The library of the U.S. Department of Agriculture has provided working space for this project and assistance has been offered by the Science and Technology Division of the Library of Congress.

FLORA EUROPAEA

The presentation of taxonomic information.

A short guide for contributors to Flora Europaea. Compiled by V. H. Heywood (University of Liverpool). — Leicester University Press 1958, 24 pp.

AMES ORCHID HERBARIUM

Mr. Leslie A. Garay, well-known orchid taxonomist who was formerly Assistant Curator of the Herbarium of the University of Toronto, Canada, was appointed as Curator of the Orchid Herbarium of Oakes Ames in the Botanical Museum of Harvard University on July 1, 1958. Dr. Richard Evans Schultes, who has served as Curator from 1954, was named Curator of the Botanical Museum on January 1, 1958, and, while continuing his interest and work in the orchids, will devote most of his time to teaching and curatorial duties in the Museum and to research in economic botany.

The Ames Herbarium, now the largest orchid herbarium in the world and the recognized center of work in the American tropics, has in the past produced monographs on several genera as well as floristic works on the orchids of North America, Mexico, Guatemala, Costa Rica, Panama, Peru and Trinidad and Tobago. Mr. Charles Schweinfurth, Research Fellow in the Herbarium, is actively working on the orchids of the Guayana highland areas of Venezuela and is now publishing his great work "The Orchids of Peru." Mr. Ernest Foldats, specialist on the orchids of Venezuela and professor of botany in the Universidad Central de Venezuela, has recently been awarded a Guggenheim Fellowship for a year's study at the Ames Herbarium. Dr. Schultes will continue his interest and work in the orchids of Colombia. Together with these colleagues, Mr. Garay will be able to carry even further ahead the intensive work which the Ames Herbarium has done in this largest of the flowering plant families.

* * *

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr. K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

Flora of Madagascar

J. Léandri: Flore de Madagascar et des Comores. 3. *Euphorbiaceae*. I. (*Phyllanthoideae*). Paris, 1958. (209 pp., 35 figs.).

Flora of Purandhar

H. Santapau: The Flora of Purandhar. An enumeration of all the Phanerogamic plants discovered in Purandhar during the years 1944-1956. New Delhi, 1958 (?). Price Rs. 15.00. (159 pp., 5 plates, 1 map; with keys and notes on distribution and ecology.)

Indian Plant Ecology

R. Misra & G. S. Puri: Indian Manual of Plant ecology. Poona, 1958. (317 pp., with illustrations; to be ordered from: The English Book Dept., 4 Mahatma Gandhi Road, Poona, India).

Distribution of Japanese Plants

H. Hara & H. Kanai: Distribution maps of flowering plants in Japan. Fasc. 1, maps 1-100. Inoue Book Comp., Tokyo, 1958. Price $ 5.00. (Detailed maps showing individual stations, with annotations in Japanese and English, and notes on distribution types).

* * *

Monographs, revisions, etc., published in periodicals.

A. H. G. Alston †: The Brazilian species of *Elaphoglossum*. Bol. Soc. Broter. 32 (2a sér.): 1-32 (1958). (An enumeration, with citations of specimens and keys).

L. E. Anderson & V. S. Bryan: Systematics of the autoicous species of *Ditrichum* subgen. *Ditrichum*. Brittonia 10 (3): 121-137 (1958). (With key and descriptions).

F. A. Barkley: A study of *Schinus* L. Lilloa 28: 5-110 (1957). (A monograph, with key, descriptions, and enumerations of specimens).

———: *Sapindaceae* of southern South America. Ibid.: 111-179 (1957). (An enumeration, with figures and keys to genera and species from Argentina and some adjacent regions).

K. Inagaki: A systematic study of the order *Chordariales* from Japan and its vicinity. Sci. Pap. Inst. Algol. Res. Hokkaido Univ., Sapporo, 4 (2): 87-197 (1958). (With descriptions and numerous illustrations).

S. Kitamura: *Compositae* Japonicae. VI. *Taraxacum*. Mem. Coll. Sci. Univ. Kyoto Ser. B, 24 (1): 1-79 (1957). (With key, descriptions, and photographs).

A. Krapovickas: Las especies de *Malvastrum* sect. *Malvastrum* de la flora argentina. Lilloa 28: 181-195 (1957). (With key and descriptions).

———: Sobre las especies polígamas de *Nototriche (Malvaceae)*. Ibid.: 269-277 (1957). (With key).

L. W. Lenz: A revision of the Pacific Coast Irises. Aliso 4 (1): 1-72 (1958). (With key, descriptions, maps, and illustrations).

T. Meyer: Las especies de *"Menodora (Oleaceae)"* de Argentina, Bolivia, Paraguay y Uruguay. Lilloa 28: 209-245 (1957). (With key, descriptions, illustrations, enumerations of specimens, and index of collectors).

P. Seeligmann: Los géneros de *"Compositae"* de Tucumán. Clave para su determinacion. Ibid.: 197-206 (1957).

R. Singer & A. P. L. Digilio: Las Boletáceas austrosudamericanas. Ibid.: 247-268 (1957). (With keys and descriptions).

R. E. Woodson, Jr., & R. W. Schery: Flora of Panama. Pt. VII fasc. 2. *Thymelaeaceae, Lythraceae* (by L. I. Nevling, Jr.), *Lecythidaceae, Rhizophoraceae* (by D. P. Gregory), *Combretaceae* (by A. W. Exell), *Myrtaceae* (by G. J. H. Amshoff). Ann. Mo. Bot. Gard. 45 (2): 93-201 (1958).

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THE NEW YORK BOTANICAL GARDEN

Dr Bassett Maguire will act as head curator and Dr Harold W. Rickett as Assistant Director during the absence of Dr David D. Keck. The latter is taking a year's leave of absence from the New York Botanical Garden to serve as Program Director of Systematic Biology for the National Science Foundation.

Dr T. A. SPRAGUE (1877-1958)

Dr Thomas Archibald Sprague (b. 7 Oct. 1877) died on 22 October of this year after a protracted illness. Dr Sprague was late Deputy Keeper of the Herbarium, Royal Botanic Gardens, Kew, Rapporteur Général for nomenclature at the Sixth International Botanical Congress, member of the Editorial Committee for the International Code of Botanical Nomenclature adopted by the Seventh International Botanical Congress and Member of the General Committee on Botanical Nomenclature of the Eighth Congress. The news of Dr Sprague's death reached the editors when this number of Taxon was already in the press. In forthcoming issues of Taxon an appreciation and a detailed account of his life and work will be given.

PERSONALIA

On 6 October 1958 Mr Anthony C. J. Jermy joined the staff of the Botany Department, British Museum of National History, London, to take charge of the Pteridophyta.

Dr Olga Lakela, after serving 26 years as a teacher of biology in schools of North Dakota and Minnesota, and for 15 years as Professor of Botany and Curator of the Herbarium at Duluth State Teachers College and the Duluth Branch of the University of Minnesota, retired as Professor Emeritus, June 15, 1958.

REGNUM VEGETABILE

It is possible to subscribe to all volumes of Regnum Vegetabile by completing the enclosed "order blank". Members doing so will be billed upon appearance of each volume for which there is a charge.

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see Taxon 3: 190-191, 214, 243; 4: 118, 178; 5: 38; 6: 240.

I.A.P.T. MEMBERSHIP 1958

Argentina

Boelcke, Ing. O., Urquiza 612, Acassuso FCNGBM (1952).
Buchinger, Dr M., C.C. 27 Sucursal 26, Buenos Aires (1957).
Burkart, Ing. A., Instituto de Botánica Darwinion, San Isidro (1952).
Cabrera, Dr A. L., Calle 64, no 584, La Plata, B.A. (1951).
Caro, J. A., Haedo Sud 1082, Córdoba (1956).
Hunziker, Ing. A. T., Casilla de Correo 23, Córdoba (1951).
Infantes Vera, Dr J., Instituto Miguel Lillo, Calle Miguel Lillo 205, Tucumán (1953).
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Molfino, Prof. J. F., Instituto de Botánica y Farmacologia, Buenos Aires (1952).
Parodi, Ing. L. R., Lavalle 4680, Buenos Aires (1954).
Ragonese, Dr A. E., Araoz 2875, Buenos Aires (1954).
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Australia

Animal Industry Branch, P.O. Box 87, *Alice Springs*, N.T. (1954).
The Queensland Herbarium, Brisbane, Queensland (1955).
C.S.I.R.O., Land Research, Entomology and Plant Industry, *Canberra*, A.C.T. (1952).
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Carolin, R. C., Dept. of Botany, University of Sydney, Sydney, N.S.W. (1957).
Cookson, Dr I., Dept. of Botany, University, Melbourne (PB) (1955).
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Eardley, Miss C. M., Dept. of Botany, University of Adelaide, Adelaide (1951).
Eichler, Dr H., State Herbarium of South Australia, Botanic Garden, North Terrace, Adelaide (1955).
Green, Dr J. W., Dept. of Botany, The University of New England, Armidale, N.S.W. (1957).
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Austria

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Buxbaum, Prof. F., Sackgasse 13/1/4, Judenburg (1958).
Cufodontis, Dr G., Reisnerstrasse 15/5, Wien (1951).
Gams, Prof. H., Botanisches Institut, Sternwartestrasse 15, Innsbruck (1951).
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Rechinger, Dr K. H., Naturhistorisches Museum, Botanische Abteilung, Burgring 7, Wien (1951).
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Belgian Congo

Callens, H., Jardin Gillet, Kisantu (1952).
Germain, Dr R., Division de Botanique de l'INEAC, Yangambi (1953).
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Belgium

Jardin Botanique de l'Etat, 236 Rue Royale, *Bruxelles* (1951).
Institut National pour l'Etude agronomique du Congo Belge (INEAC), 12-14 Rue aux Laines, *Bruxelles* (1951).
Institut Botanique de l'Université de Liège, 3 Rue Fusch, *Liège* (1951).
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Brazil

Instituto Agronômico de Campinas, Caixa Postal 28, *Campinas,* Est. do São Paulo (1954).
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Barbosa, Prof. O., Caixa Postal 294, Petropolis, Rio de Janeiro (PB) (1955).
Bezerra Cavalcante, Dr P., Museu Paraense "Emilio Goeldi", Caixa Postal 399, Belém, Para (1957).
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Costa, Dra C., Instituto Biológico da Bahia, Caixa Postal 553, Bahia (1955).
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Dolianiti, Dr E., Avenida Pasteur 404, Praia Vermelha, Rio de Janeiro (1955).
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Godoy, Prof. V. M. de, Escola de Farmacia, Ouro Petro, Minas Gerais (1954).
Goncalves Lima, Dr O., Escola de Quimica, Universidade do Recife, Rua Don Bosco, Recife, Pernambuco (1956).
Hatschbach, G., Caixa Postal 1142, Curitiba, Paraná (1955).
Heringer, Dr E. P., Hôrto Florestal, Paraopeba (1954).
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Occhioni, Prof. P., Faculdade Nacional de Farmácia, Universidade do Brasil, Avenida Pasteur 250, Rio de Janeiro (1957).
Pabst, Dr G. F. J., Caixa Postal 5 (Lapa), Rio de Janeiro (1955).
Pires, J. M., Instituto Agronômico do Norte, Belém, Pará (1954).
Poggi de Figueiredo, Dr A., Rua Carneiro Vilela, 348 Espinheiro, Recife (1955).
Queiroz, Dr J., Instituto Biológico da Bahia, Caixa Postal 553, Bahia (1955).

Reitz, P. R. Herbario "Barbosa Rodrigues", Itajai, Santa Catarina (1952).

Rodrigues Mattos, Dr J., Escola de Agronômia de Porto Alegre, Porto Alegre, R.G.S. (1958).

Rohr, S. J., P. J. A., Colégio Catarinense, Florianópolis (1954).

Silva, Dr P., Rua Argentina 1-30 and s/313, Salvador, Bahia (1955).

Silva Maia, Dr H. da, Departamento de Micologia, Universidade do Recife, Rua do Espinheiro 386, Recife, Pernambuco (1954).

Simao, Dr S., Caixa Postal 70, Curitiba, Paraná (1954).

Tavares, Dr S., Caixa Postal 1531, Recife, Pernambuco.

Vattimo, Dra I. de, Jardim Botânico do Rio de Janeiro, Rua Jardim Botânico 1008, Gavea, Rio de Janeiro (1955).

Vital, Dr A. F., Departamento de Micologia, Instituto de Micologia da Universidade do Recife, Rua de Espinheiro 386, Recife, Pernambuco (1954).

British North Borneo

Forest Department, Sandakan (1954).

British West Indies

Imperial College of Tropical Agriculture, Trinidad (1957).

Burma

The Silviculturist, 526 Merchant Street, *Rangoon* (1951).

Canada

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Herbier Marie-Victorin, Institut de Botanique de l'Université de Montréal, 4101 Est, Rue Sherbrooke, *Montréal* 36, Qué. (1954).

National Museum of Canada, Ottawa, Ont. (1951).

Division of Botany and Plant Pathology, Science Service, Dept. of Agriculture, Carling Avenue, *Ottawa*, Ont. (1952).

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Cain, R. F., Dept. of Botany, University of Toronto, Toronto 5, Ont. (1951).

Calder, J. A., Division of Botany, Science Service, Dept. of Agriculture, Ottawa, Ont. (1951).

Cody, W. J., Division of Botany, Science Service, Dept. of Agriculture, Ottawa, Ont. (1951).

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Crum, Dr H. A., National Museum of Canada, Ottawa, Ont. (1954).

Dansereau, Dr P., Institut Botanique de l'Université de Montréal, 4101 Est, Rue Sherbrooke, Montréal 36, Qué. (1951).

Frankton, C., Division of Botany, Science Service, Dept. of Agriculture, Ottawa, Ont. (1951).

Gardner, Dr G., School of Higher Commercial Studies, 535 Viger Avenue, Montréal 24, Qué. (1951).

Gibbs, Prof. R. D., McGill University, Montréal 2, Qué. (1952).

Gillett, Dr J. M., Division of Botany, Science Service, Dept. of Agriculture, Ottawa, Ont. (1951).

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Hillis, Miss L. W., Dept. of Biology, University of New Brunswick, Fredericton, N.B. (1958).

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Kennedy, Mrs L. L., Dept. of Botany, University of Alberta, Edmonton, Alta. (1958).

Krajina, Prof. V. J., Dept. of Biology and Botany, University of British Columbia, Vancouver 18, B.C. (1956).

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Montgomery, F. H., Agr. College, Guelph, Ont. (1952).

Moss, E. H., Dept. of Botany, University of Alberta, Edmonton, Alta. (1951).

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Raymond, Dr M., Montreal Botanical Garden, 4101 Sherbrooke St. East, Montreal, Que. (1951).

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Savile, D. B. O., Division of Botany, Science Service, Dept. of Agriculture, Ottawa, Ont. (1951).

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Szczawinski, Dr A. F., Curator of the Herbarium, Provincial Museum, Victoria, B.C. (1957).

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Ziller, W. G., Forest Biology Laboratory, 409 Federal Building, Victoria, B.C. (1955).

Canary Islands

Sventenius, E., Jardin de Aclimatacion de Orotava, Puerto de la Cruz, Tenerife (1958).

Chile

Looser, G., Casilla 5542, Santiago 6 (1951).

Pfister, A., Instituto de Botánica y Farmacognosia, Casilla 237, Concepción (1951).

Tellez, Dr R., Food and Agriculture Organization of the United Nations, Oficina Regional para Sudamerica, Casilla 10095, Santiago de Chile (1954).

China

Fang, Wen-Pei, Dept. of Biology, National Szechuan University, Chengtu, Szechuan (1951).

Keng, Hsuan, Taiwan University, Taipeh, Taiwan (Formosa) (1953).

Colombia

Dugand, Dr A., Apartado Postal 85, Barranquilla (1952).

Pinto, Dr P., Instituto de Ciencias Naturales, Ap. Aereo 7495, Bogota (1957).

Costa Rica

Leon, J., Instituto de Ciencias Agricolas, Apartado Postal 74, Turrialba (1952).

Cuba

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Alain, Brother (*Enrique Liogier*), Herbario de la Salle, Calle 13 n. 608, Vedado, Habana (1951).

Alvarez, Dra M. T., Calle 14 n. 60, Reparto Miramar, Habana (1951).

Alvira y Devesa, Dra L. M., Calle 10 n. 29, entre A y lra., La Sierra, Marianao, Habana (1951).

Buliés Hernández, Dra R., San Miguel n. 428, Habana (1955).

Desoindre Coustaty, Dr C., Jardin Botánico de la Universidad, Carlos III esq. a Infanta, La Habana (1956).

Díaz-Piferrer, Prof. M., Laboratorio de Biología Marina, Universidad de Oriente, Santiago de Cuba, Oriente Province (1958).

Dominicis, J. A., Calle A n. 214, Reparto Almendares, Marianao, Habana (1954).

Gale, J. A., Estación Experimental Agronómica, Santiago de las Vegas (1951).

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Mencia y Garcia, Dr M., Calle 6 n. 501. esquina a 21. - Vedado, Habana (1951).

Pérez Diaz, Dr F., Calle "N" n. 455, Apartado Correos 4041, Habana (1951).

Ponce de Léon y Aymé, Dr A., Jardin Botánico de la Universidad, Carlos III esq. a Infanta, Habana (1951).

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Czechoslovakia

Dostál, Dr D. J., Botanicky Ustav, University Karlovy, Benátská 2, Praha II (1952).
Havlena, Dr V., Geological Dept. of the Charles University, Albertov 6, Praha II (PB) (1955).
Obrhel, J., Geol.-geograf. fakulta, Karlovy University, Albertov 6, Praha II (PB) (1958).
Paclt, Dr J., Lamačská cesta 5, Bratislava 9 (1952).
Pilat, Dr A., Narodni Museum, Vaclavske namesti 1700, Praha II (1954).
Smarda, Dr J., Knihovna Moravského Musea, Zelny trh 8, Brno 1 (1951).
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Denmark

Buchwald, N. F., Dept. of Plant Pathology, Royal Vet. and Agr. College, Rolighedsvej 23, København V (1952).
Christensen, T., Universitets Botaniske Laboratorium, Gothersgade 140, København K (1954).
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Ingwersen, P., Danmarks Geologiske Undersogelse, Charlottenlund (PB) (1955).
Lange, Dr M., Universitets Botaniske Laboratorium, Gothersgade 140, København K (1954).
Mølholm Hansen, Dr H., Universitets Botaniske Museum, Gothersgade 130, København K (1951).
Sørensen, Prof. Th., Universitets Botaniske Laboratorium, Gothersgade 140, København K (1955).

Egypt

Abdalla, M., Agricultural Museum, Dokki, Cairo (1951).
Basta, F., Agricultural Museum, Dokki, Cairo (1951).
Drar, M., Agricultural Museum, Dokki, Cairo (1951).
Iamam, M., Dept. of Botany, Faculty of Science, Cairo University, Giza, Cairo (1955).
Kassas, Dr M. A., Dept. of Botany, Faculty of Science, Cairo University, Giza, Cairo (1952).
Mahmoud, Dr M. Z., Dept. of Botany, Faculty of Science, Cairo University, Giza, Cairo (1952).
Saad, Dr S. I., Faculty of Science, The University, Moharram Bey, Alexandria (1951).
Shafey, M., M. Sc., Faculty of Science, Cairo University, Giza, Cairo (1951).
Täckholm, Mrs V., 60 Sharia Maek el Saleh, Roda, Cairo (1951).
Tadros, Prof. M., Faculty of Science, The University, Moharram Bey, Alexandria (1951).

Finland

Buch, H. R. V., Riddaregatan 7A, Helsinki 6 (1952).
Grönblad, Dr R., Centralgatan 86, Karis (1956).
Jalas, Dr J., Botanical Museum, Unioninkatu 44, Helsinki (1951).
Luther, Dr H., Botanical Museum, Unioninkatu 44, Helsinki (1951).
Marklund, Dr G., Botanical Museum, Unioninkatu 44, Helsinki (1954).

France

Laboratoire de Phanérogamie, Muséum d'Histoire Naturelle, 57 Rue Cuvier, *Paris* V (1951).
Bibliothèque Centrale, Muséum d'Histoire Naturelle, 36 Rue Geoffroy Saint Hilaire, *Paris* V (1952).

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Boureau, Dr E., 64 Rue de Paris, Joinville-le-Pont, Seine (PB) (1955).
Campbell, Miss M. S., Casa Rossa, Menton-Garavan, Alpes Mar. (1953).
Corsin, Pierre, 76 Rue du Pont du Lion d'Or, Lille-Fives (1956).
Deflandre, G., C.N.R.S.O., 105 Bd Raspail, Paris VI (PB) (1955).
Depape, Prof. G., Faculté libre des Sciences, 13 Rue de Toul, Lille (PB) (1955).
Deunff, J., Institut de Géologie, Rue du Thabor, Rennes, Ille et Vilaine (PB) (1955).
Doubinger, Dr J., 31 Rue de la Fonderie, Toulouse (1957).
Durand, Mlle S., Institut de Géologie, Rue du Thabor, Rennes, Ille et Vilaine (PB) (1958).
Emberger, Prof. L., Institut Botanique, 5 Rue Auguste Broussonet, Montpellier (1958).

Gaussen, Prof. H., Laboratoire de Botanique, Faculté des Sciences, Toulouse (1952).

Grambast, L. J., 15 Rue Daubenton, Paris V (PB) (1955).

Grangeon, P., Ecole St Julien, Brioude, Hte. Loire (PB) (1955).

Humbert, Prof. H., Muséum d'Histoire Naturelle, Laboratoire de Phanérogamie, 57 Rue Cuvier, Paris V (1951).

Jacques-Félix, H., 45bis Avenue de la Belle Gabrielle, Nogent sur Marne, Seine (1952).

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Marnier-Lapostolle, J., 91 Bd Haussmann, Paris (1954).

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Normand, D., 45bis Avenue de la Belle Gabrielle, Nogent sur Marne, Seine (1952).

Peltier, M. A. G., 12 Rue Eugène Delacroix, Saint Maurice, Seine (1953).

Portères, Prof. R., Laboratoire d'Agronomie tropicale, Muséum d'Histoire Naturelle, 57 Rue Cuvier, Paris V (1952).

Rabéchault, Dr H., 70 Rue Claude Jean Romain, Le Perreux-sur-Marne, Seine (1954).

Raymond-Hamet, Dr, 14 Rue de la Glacière, Paris XIII (1956).

Retz de Serviés, B. de, 20 Rue Magenta, Versailles (1951).

Schnell, Dr R., Laboratoire de Botanique Tropicale, Avon, Seine et Marne (1954).

Sillans, R., 60 Avenue Simone, Brunoy, Seine et Oise (1952).

Tardieu-Blot, Mme M., Muséum d'Histoire Naturelle, Laboratoire de Phanérogamie, 57 Rue Cuvier, Paris V (1954).

Veillet-Bartoszewska, Mme M., 1 Rue du Cardinal Mercier, Paris IX (PB) (1955).

Vetter, P., Service géologique, Houillères d'Aquitaine, Decazeville-Aveyron (1957).

Vilmorin, R. de, Services Scientifiques, Verrières-le-Buisson, Seine et Oise (1955).

Vinot, M., Centre de Recherches Agronomiques, Villa Thuret, Cap d'Antibes, Alpes Mar. (1954).

French West Africa

Miege, J., Laboratoire de Botanique, Faculté des Sciences, Dakar (1957).

Germany

Botanischer Garten und Museum, Königin Luisestrasse 6-8, *Berlin-Dahlem* (1951).

Institut für systematische Botanik und Pflanzengeographie der freien Universität Berlin, Königin Luisestrasse 6-8, *Berlin-Dahlem* (1956).

Institut für Kulturpflanzenforschung der Deutschen Akademie der Wissenschaften zu Berlin, *Gatersleben*, Krs. Aschersleben (1955).

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Boerner, F., Botanischer Garten, Darmstadt (1955).

Buchheim, Dr G., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1956).

Buchloh, Dr G., Institut für Obstbau, Auf dem Hügel 6, Bonn a. Rh. (1952).

Cullmann, Dr W., Marktheidenfeld/Main (1958).

Domke, Dr W., Staatsinstitut für allgemeine Botanik, Herbarium Hamburgense, Jungiusstrasse 6, Hamburg 36 (1951).

Eckardt, Prof. Th., Königin Luisestrasse 6-8, Berlin-Dahlem (1957).

Encke, F., Palmengarten, Siesmayerstrasse, Frankfurt a. M. (1955).

Firbas, Prof. F., Untere Karspüle 2a, Göttingen (1954).

Gerloff, Dr J., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1957).

Gräser, R., Kolerstrasse 22, Nürnberg (1958).

Grummann, Dr V. J., Liliencronstrasse 16, Berlin-Steglitz (1958).

Guthörl, Dr P., Triererstrasse 4, Bergschule, Saarbrücken 2, Saarland (1955).

Heine, Dr H. H., Botanische Staatssammlung, Menzingerstrasse 67, München 38 (1952).

Henssen, Dr A., Biegenstrasse 52, Marburg (1958).

Huber, Prof. J. A., Bischof-von-Linggstrasse 8, Dillingen, Donau (1958).

Jacobsen, H., Botanischer Garten, Schwanenweg 13, Kiel (1958).

Kirchheimer, Prof., Elsässerstrasse 2, Freiburg i. Br. (PB) (1957).
Klement, Dr O., Bauweg 5, Hannover-Linden (1958).
Kräusel, Prof. R., Naturk. Museum Senckenberg, Senckenberg Anlage 23, Frankfurt a. M. (PB) (1955).
Ludwig, Dr W., Botanisches Institut, Pilgrimstein 4, Marburg a. d. L. (1952).
Maatsch, Prof. R., Burgweg 11, Hannover-Herrenhausen (1955).
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Mägdefrau, Prof. K., Botanisches Institut, Menzingerstrasse 67, München 38 (PB) (1955).
Mansfeld, Prof. R., Institut für Kulturpflanzenforschung, Gatersleben (1952).
Markgraf, Prof. F., Menzingerstrasse 71, München 38 (1951).
Melchior, Prof. H., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem, (1951).
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Oberdorfer, Dr E., Landessammlungen für Naturkunde, Erbprinzenstrasse 13, Karlsruhe 17A (1952).
Pfeiffer, Dr H. H., Labor. f. Polar.-Mikrosk., Wilhelmstrasse 7, Bremen I (1951).
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Schulze, Dr G. M., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1953).
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Spanowsky, W., Institut für spezielle Botanik, Goethe Allee 26, Jena (1954).
Straus, Dr A., Erkelenzdamm 7, Berlin-West SO 36 (PB) (1955).
Takahashi, K., Geologisches Institut der Universität, Zülpicherstrasse 47, Köln (PB) (1958).
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Wetzel, Dr O., L. Boldt-Strasse, (24) Eutin/Holst. (PB) (1955).
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Ghana

University College of Ghana, Achimota (1953).

Great Britain

National Institute of Agricultural Botany, Huntingdon Road, *Cambridge* (1954).
Botanic Garden, Cambridge (1957).
Botany School, Downing Street, *Cambridge* (1955).
Royal Botanic Garden, Edinburgh 4, Scotland (1956).
The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).
Commonwealth Mycological Institute, Ferry Lane, *Kew*, Surrey (1956).
The Hartley Botanical Laboratories, University of Liverpool, *Liverpool* (1955).
General Library, British Museum of Natural History, Cromwell Road, *London S.W. 7* (1956).
The Linnean Society of London, Burlington House, Piccadilly, *London W. 1* (1953).
The Royal Horticultural Society, Vincent Square, *London S.W. 1* (1958).
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University Library, Reading (1955).

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Balfour-Browne, Mrs F. L., M.Sc., British Museum of Natural History, Cromwell Road, London S.W. 7 (1952).

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Barnett, Dr E. C., 48 Albury Road, Aberdeen (1957).

Blakelock, R. A., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1957).

Bor, Dr N. L., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Brenan, J. P. M., M.A., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Bullock, A. A., B.Sc., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1951).

Burnett, Prof. J. H., Dept. of Botany, The University, St. Andrews (1952).

Burtt, B. L., B.Sc., F.L.S., Royal Botanic Garden, Edinburgh 4 (1954).

Byles, R. S., Kinloch, Craigweil Avenue, Radlett, Herts. (1955).

Calder, Miss M. G., Dept. of Botany, The University, Manchester 13 (PB) (1955).

Dalby, Dr D. H., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1957).

Dandy, J. E., M.A., F.L.S., Dept. of Botany, British Museum of Natural History, Cromwell Road, London S.W. 7 (1951).

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DeWolf, G. P., Jr., Botany School, Downing Street, Cambridge (1957).

Dixon, P. S., The Hartley Botanical Laboratories, University of Liverpool, Liverpool (1952).

Donald, J. D., B.Sc., A.R.I.C., 48 Wicklands Avenue, Saltdean, Brighton, Sussex (1958).

Erith, Dr A. G., The University, Reading (1951).

Exell, A. W., M.A., F.L.S., British Museum of Natural History, Cromwell Road, London S.W. 7 (1952).

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Gibby, Mrs A. N., Prebends' Gate, Quarry Heads Lane, Durham (1951).

Gillett, J. B., M.A., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1953).

Gilmour, J. S. L., M.A., F.L.S., Cory Lodge, Hills Road, Cambridge (1951).

Godward, Dr M., Queen Mary College, London E. 1 (1952).

Goodway, K. M., University College of North Staffordshire, Keele, Staffordshire (1952).

Green, P. S., Royal Botanic Garden, Edinburgh 4 (1951).

Hamshaw Thomas, Dr H., Botany School, Cambridge (1954).

Harris, Prof. T. M., The University, Reading (PB) (1955).

Hawkes, Dr J. G., Dept. of Botany, The University, Edgbaston, Birmingham 15 (1953).

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Heywood, Dr V. H., The Hartley Botanical Laboratories, The University, Liverpool 3 (1951).

Holttum, Prof. R. E., Kew Gardens, 80 Mortlake Road, Kew, Surrey (1951).

Hoyle, A. C., Dept. of Botany, The University, Oxford (1952).

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Hughes, N. F., Sedgwick Museum, Cambridge (PB) (1955).

Hutchinson, Dr J., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1956).

Hyde, H. A., B.Sc., National Museum of Wales, Cardiff, Wales (1951).

Irvine, Mrs D. E. G., 4 Cranmer Road, Cambridge (1952).

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Kent, D. H., 75 Adelaide Road, West Ealing, London W. 13 (1951).

Killick, D. J. B., M.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1954).

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Lacey, Dr W. S., Dept. of Botany, University College, Bangor, Caerns., Wales (1956).

Laycock, T. R., B.Sc., 4 Leaford Avenue, Denton, near Manchester, Lancashire (1951).

Lewis, J., B.Sc., British Museum of Natural History, Cromwell Road, London S.W. 7 (1952).

Lewis, R., "Chatsworth", 1 Victoria Park, Colwyn Bay, Denbighshire (1951).

Lousley, J. E., 7 Penistone Road, Streatham, London S.W. 16 (1952).

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Stern, Col. F. C., O.B.E., M.C., F.L.S., Highdown, Goring by Sea, Sussex (1951).

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Turrill, Dr W. B., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1951).

Tutin, Prof. Th. G., F.L.S., University College, Leicester (1951).

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Wakefield, Miss E. M., 20 Castlegate, Richmond, Surrey (1955).

Walters, S. M., Botany School, Cambridge (1951).

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Warburg, Dr E. F., South Hayes, Yarnells Hill, Oxford (1952).

Wesley, A., Dept. of Botany, The University, Leeds (PB) (1958).

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Hungary

Greguss, Prof. P., Botanical Institute of the University, Szeged (PB) (1955).

Rásky, Dr K., Lovas ut 23, Budapest I (PB) (1955).

Iceland

Áskelsson, J., Solvallagata 22, Reykjavík (PB) (1957).

India

Central Botanical Laboratory, W. Chatham Lines, Prayag, *Allahabad*, U.P. (1957).

Indian Botanic Garden, P.O. Botanic Garden, *Calcutta*, Dist. Howrah, West Bengal (1952).

National Botanic Gardens, Lucknow (1954).

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Darshan Pant, Dr D., Dept. of Botany, The University, Allahabad (PB) (1956).
Herbert, P. S., Blatter Herbarium, St. Xavier's College, Bombay (1957).
Janaki Ammal, Dr E. K., Central Botanical Laboratory, Botanical Survey of India, Chhater Manzil, Lucknow (1952).
Kaul, Dr K. N., National Botanic Gardens, Lucknow (1954).
Oza, G. M., Salat Wada, "OZA Building", Kothi Avenue Road, Baroda (1958).
Pallithanam, Rev. J., S. J., Loyola College, Madras 31 (1958).
Panthaki, Miss D. P., Wadia Building, Princess Street, Bombay 2 (1957).
Puri, Prof. V., Dept. of Botany, Meerut College, Meerut (1955).
Raizada, Dr M. B., Botany Branch, Forest Research Inst., P.O. New Forest, Dehra Dun (1953).
Rao, Dr A. S., Dept. of Botany, Govt. College, Mercara, Mysore State (1955).
Santapau, Dr H., St. Xavier's College, Fort, Bombay 1 (1954).
Sen, Dr J., Dept. of Botany, University College of Science, 35 Ballygunge Circular Road, Calcutta 19 (PB) (1955).
Seshagiri, R. R., Botanical Survey of India, 'Nivala', Shillong, Assam (1957).
Venkatachary, Prof. S., Botany Department, Dungar College, Bikaner, Rajasthan (PB) (1955).
Wight, Dr W., Tocklai Experimental Station, Cinnamara P.O., Assam (1956).

Indonesia

Kostermans, Dr. A. J. G. H., Herbarium Bogoriense, Djalan Raya 22, Bogor (1951).
Schuurman, J. A., Herbarium Bogoriense, Djalan Raya 22, Bogor (1952).

Iran

Parsa, Prof. A., Muzeyeh Olum-Tabyi (Dabestan Nezami), Avenue Sepah, Teheran (1953).
Sabeti, Dr H., Forestry Department, Meidane Ferdowsi, Teheran (1952).

Iraq

Polunin, Prof. N., Dept. of Botany, College of Arts and Sciences, Baghdad (1951).

Ireland

Walsh, Dr Th. J., Botanic Gardens, Glasnevin, Dublin (1951).
Webb, Prof. D. A., School of Botany, Trinity College, Dublin (1951).

Israël

Feinbrunn, Dr N., Hebrew University, Dept. of Botany, Jerusalem (1952).
Zohary, Dr M., Hebrew University, Dept. of Botany, Jerusalem (1952).

Italy

Ciferri, Prof. R., Istituto Botanico dell' Università, P.O.B. 165, Pavia (1951).
Concetto, D., Via Stagno no. 20, Catania (1958).
Francini-Corti, Prof. E., Istituto Botanico dell' Università, Via Salerno 165A, Bari (1952).
Giacomini, Prof. V., Istituto Botanico dell' Università, P.O.B. 165, Pavia (1951).
Martinoli, Prof. G., Istituto Botanico dell' Università, Via Luca Ghini 2, Pisa (1957).
Pichi Sermolli, Prof. R. E. G., Istituto Botanico dell' Università, Via Muroni 29, Sassari, Sardinia (1951).
Sappa, Prof. F., Istituto Botanico dell' Università, Viale Mattioli 31, Torino (1951).

Ivory Coast

Bodard, J., C. R. A. Bingerville, French W. Africa (1954).

Japan

Akiyama, Prof. S., Dept. of Botany, Faculty of Science, Hokkaido University, Sapporo (1954).
Hara, Prof. H., Botanical Institute, Faculty of Science, University of Tokyo, Hongo, Tokyo (1951).
Hattori, Dr S., Hattori Botanical Laboratory, Obi-Machi, Nichinan, Miyazaki Pref., Kyushu (1952).
Hisauchi, Prof. K., Pharmaceutical Institute, Tôhô University, Narashino, Chiba Pref. (1953).
Horikawa, Prof. R., Botanical Institute, Faculty of Science, Hiroshima University, Hiroshima (1954).

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Inagaki, Prof. K., Seaside Laboratory of the Institute of Algological Research, Faculty of Science, Hokkaido University, Funamicho, Muroran City, Hokkaido (1953).
Kanaya, Dr T., Institute of Geology and Paleontology, Tohoku University, Sendai (PB) (1958).
Kitamura, Prof. S., Botanical Institute, Faculty of Science, Kyoto University, Kyoto (1956).
Matsumura, Dr Y., Societas Herbaria Orientali-Asiatica, c/o Shoei Junior College, Nakayamate 6-Chome, Ikutaku, Kobe (1955).
Nakamura, Prof. J., Literature and Science Faculty, Kochi University, Kochi (PB) (1958).
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Ochi, Dr H., Biological Institute, Tottori University, 1, Tachikawa-cho, Tottori City (1957).
Ohwi, Dr J., National Science Museum, Ueno Park, Tokyo (1955).
Oku, H., 86 Horinouchi, Toshima-ku, Tokyo (1958).
Oshite, K., Hokkaido, Gakugei University, Hakodate (PB) (1958).
Sato, Prof. M., Biological Institute, Faculty of Liberal Arts and Science, Ibaraki University, Mito (1952).
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Tuyama, Prof. T., Faculty of Science, Ochanomizu University, Bunkyo-ku, Tokyo (1953).
Umezaki, I., Dept. of Fisheries, Kyoto University, Maizuru (1957).
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Jordan

Waldee, Dr E. L., U.S. O.M./Jordan, c/o American Embassy, Amman (1951).

Kenya

Greenway, Dr P. J., O.B.E., F.L.S., The East African Herbarium, P.O. Box 5166, Nairobi, E. Africa (1951).

Malaya

Forest Research Institute, Kepong, Selangor (1953).

Marocco

Institut Scientifique Chérifien, Avenue Biarnay, *Rabat* (1951).

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Mauritius

Vaughan, Dr R. E., Phoenix (1953).

Mexico

Palacios Rincón, M. A., Instituto Botánico de Chiapas, 1/a Avenida Sur no. 42, Apdo 24, Tuxtla Gutiérrez, Chiapas (1955).

Monaco

Vatrican, L. F., Jardin Exotique, Boîte Postale 1, Monaco-Ville (1958).

Mozambique

Pedro, J. G., c/o Junta de Exportação do Algodão Colonial, P.O. Box 1073, Lourenço Marques, E. Africa (1951).

Netherlands

Rijksherbarium, Nonnensteeg 1, *Leiden* (1951).
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Bergmans, J., Nic. v. Eschstraat 42, Oisterwijk (1952).
Beumée, Dr J. G. B., Edeseweg 72, Bennekom (1951).
Boom, Dr B. K., Grindweg 152b, Wageningen (1951).

Borssum Waalkes, J. van, Hofbrouckerlaan 36, Oegstgeest (1951).
Bremekamp, Prof. C. E. B., Ostadelaan 14, Bilthoven (1951).
Buining, A. F. H., Burg. de Beaufortweg 10, Leusden (1958).
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Florschütz, P. A., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).
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Heimans, Prof. J., Quinten Matsijsstraat 4, Amsterdam (1951).
Hekking, W. H. A., Zuilenstraat 17, Utrecht (1955).
Hoog, Th., "Zwanenburg", Koninginneweg 86, Haarlem (1955).
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Koster, Dr J. Th., Warmonderweg 48, Oegstgeest (1951).
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Lam, Prof. H. J., Rijksherbarium, Nonnensteeg 1, Leiden (1951).
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Vermeulen, Dr P., Wodanstraat 14, Amsterdam (1951).
Vroman, M., Rapenburgerstraat 128, Amsterdam-C. (1953).
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Wit, Dr H. C. D. de, Doorwerthsestraat 10, Heelsum (1951).
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New Guinea (Austr.)

Womersley, J. S., Department of Forests, Lae (1953).

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Kalkman, C., Afdeling Boswezen, Sectie Bosbotanie, Manokwari (1955).

New Zealand

Cooper, R. C., Auckland Museum, P.O. Box 9027, Newmarket, Auckland (1951).
Hamlin, B. G., Dominion Museum, Private Bag, Wellington (1957).

Harris, Dr W. F., N.Z. Geological Survey, P.O. Box 368, Lower Hutt (PB) (1958).
Moore, Miss L. B., 9 Hadfield Terrace, Wellington W. 1 (1954).
Stoneley, Mrs. H. M. M., c/o BP-Shell & Todd Co. Ltd., "Braeburn", 65 Wainui Road, Gisborne, North Island (PB) (1956).
Zotov, V. D., Botany Division, D.S.I.R., P.O. Box 2015, Christchurch (1956).

Nicaragua

White, Dr S. S., c/o U.S. Embassy, Managua (1951).

Nigeria

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Eckblad, F. E., University Botanical Garden, Trondheimsveien 23b, Oslo (1957).
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Hagen, A., Botanisk Museum, Oslo 45 (1951).
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Lid, J., Botanisk Museum, Oslo 45 (1951).
Rønning, Dr O. I., Tromsø Museum, Tromsø (1953).
Thorsrud, Dr A., Institut for Blomsterdyrkning, Vollebekk (1957).
Wendelbo, P., Botanisk Museum, Bergen (1956).

Peru

Museo de Historia Natural "Javier Prado", Avenida Arenales 1256, Lima (1951).

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Philippines

Quisumbing, Dr E., National Museum, Herran & Taft Avenue Sts., Manila (1951).
Santos, Dr J. V., Dept. of Botany, College of Liberal Arts, University of the Philippines, Quezon City (1952).
Steiner, Dr M. L., 419 Park Avenue, Pasay (1953).
Velasquez, G. T., Dept. of Botany, University of the Philippines, Diliman, Rizal (1957).

Poland

Institutum Botanicum, Academiae Scientiarum Polonae, Lubicz 46, *Kraków* (1957).

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Portugal

Jardim e Museu Agricola do Ultramar, Calçada do Galvão, *Belém-Lisboa* (1952).
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Carvalho e Vasconcellos, Prof. J. de, Instituto Superior de Agronômia, Lisboa (1951).
Fernandes, Prof. A., Instituto Botânico da Universidade de Coimbra, Coimbra (1951).
Malato Beliz, J., Laboratório de Botânica, Estação de Melhoramento de Plantas, Elvas (1951).
Pinto da Silva, A. R., Estação Agronômica Nacional, Sacavem (1951).
Tavares, Dr C. N., Instituto Botânico, Faculdade de Ciencias, Lisboa (1951).
Teixeira, Prof. C., Faculdade de Ciencias da Universidade, Lisboa (PB) (1955).

Puerto Rico

Almodovar, L. R., Institute of Marine Biology, University of Puerto Rico, Mayaguez (1958).

Roumania

Papp, Prof. C., Str. Pacurari no. 83, Iasi (1952).

El Salvador

Instituto Tropical de Investigaciones Cientificas, Ap. Postal 740, *San Salvador* (1956).

Singapore

Dept. of Botany, University of Malaya, Cluny Road, *Singapore 10* (1951).
Botanic Gardens, Singapore 10 (1957).

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Sinclair, J., Botanic Gardens, Singapore 10 (1956).

S. Rhodesia

Boughey, Prof. A. S., Private Bag 167 H, Salisbury (1956).
Greatrex, F. C., 8 Queen's Gate Hats, Baines Avenue & Fifth Street, Causeway, Salisbury (1955).

Spain

Instituto Antonio José Cavanilles, Plaza Murillo 2, *Madrid* (1953).
Instituto Forestal de Investigaciones y Experiencias, Apartado de Correos 8.111, *Madrid* (1956).

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Bolós, Prof. A. de, Instituto Botánico de Barcelona, Parque de Montjuic, Barcelona (1951).
Fernandez Galiano, Prof. D., Av. de los Toreros, 67, 2°-izq., Madrid (1958).
Guinea, Prof. E., Ayala 73, Madrid (1951).
Lainz, Dr M., Universidad Pontificia, Comillas, Santander (1953).
Menéndez Amor, Miss J., Instituto José de Acosta, Museo Nacional de Ciencias Naturales, Laboratorio de Palinologia, P.° de la Castellana 84, Madrid (1957).
Panella Bonastre, J., Constitucion 155, Barcelona (1958).
Paunero, Dr E., Jardin Botánico, Plaza Murillo 2, Madrid (1951).
Riviere de Caralt, F., 58 Ronda San Pedro, Barcelona (1958).

Sudan

Beshir, B., Gezira Research Farm, Wad Medani (1957).
MacLeay, Dr K. N. G., Gordon Memorial College, P.O. Box 321, Khartoum (1953).

Sweden

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Andersson, O., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1952).
Asplund, Dr E., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1952).
Dahlgren, R., Botaniska Museet, Lund (1956).
Degelius, Dr G., Botaniska Trädgården, Göteborg C. (1952).
Du Rietz, Prof. G. E., Växtbiologiska Institutionen, Uppsala 8 (1954).
Erdtman, Prof. G., Palynological Laboratory, Nybodagatan 5, Stockholm-Solna (1951).
Florin, Prof. R., Bergianska Trädgården, Stockholm 50 (PB) (1951).
Fries, Prof. R. E., Floragatan 3, Stockholm, (1951).
Harling, Dr G., Bergianska Trädgården, Stockholm 50 (1952).
Hässler, A., Ö. Vallgatan 39, Lund (1951).
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Hjelmqvist, Dr H., Botaniska Museet, Lund (1951).
Holm, L., Botaniska Museet, Uppsala 1 (1951).
Horn af Rantzien, H., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1951).
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Lundblad, Miss B., Palaeobotaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (PB) (1951).
Mattisson, K. H., S. Kronoborgsvägen 10A, Malmö (1951).
Nannfeldt, Prof. J. A., Botaniska Museet, Uppsala 1 (1951).
Norlindh, Dr T., Botaniska Museet, Lund (1951).
Peterson, B. H., Botaniska Museet, Lund (1951).
Pettersson, B., Adelsgatan 2, Visby (1951).
Runemark, Dr H., Botaniska Museet, Lund (1952).

Santesson, Dr R., Botaniska Museet, Uppsala (1951).
Selling, Prof. O. H., Palaeobotaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (PB) (1955).
Skottsberg, Prof. C., Apotekaregatan 8, Göteborg (1951).
Weimarck, Prof. H., Botaniska Museet, Lund (1951).

Switzerland

Institut et Jardin botaniques de l'Université, Altenbergrain 21, *Bern* (1951).
Nomenklaturkommission des Schweizerischen Gartenbaues, Münsingen - Bern (1953).
Conservatoire botanique de la Ville de Genève, 192 Route de Lausanne, *Genève* (1951).
Musée de Botanique, Palais de Rumine, *Lausanne* (1951).
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Baehni, Prof. Ch., Conservatoire Botanique, 192 Route de Lausanne, Genève (1951).
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Daepp, H. P., Münsingen - Bern (1951).
Eichenberger, Dr E., Dorstrasse 194, Meilen (1958).
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Hochreutiner, Prof. B. P. G., 8 Rue St Victor, Genève (1951).
Huber-Morath, Dr A., Salinenstrasse 17, Basel (1952).
Krainz, H., Mythenquai 88, Zürich 2 (1958).
Maurizio, Dr A., Eidg. Versuchsanstalt, Bienenabteilung, Liebefeld/Bern (1951).
Moll, H. G., Gartendörfli, Gotenbach, Sihltal-Zürich (1958).
Thommen, Dr E., Missionsstrasse 15, Basel (1954).

Tanganyika

Stoneley, Dr H. M. M., c/o d'Arcy Shell Exploration Parties, P.O. Box 1721, Dares-Salaam (PB) (1956).

Thailand

Botanical Section, Department of Agriculture, Bangkok (1953).

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Suvarnasuddhi, K., Forest Products Research Division, Royal Forest Dept., Bangkok (1951).

Turkey

Demiriz, Dr H., Universitat Istanbul, Institut für Pharmazeutische Botanik und Genetik, Süleymaniye, Istanbul (1956).

Union of South Africa

The Bolus Herbarium, University of Cape Town, Rondebosch, Cape Town (1952).
The Moss Herbarium, Dept. of Botany, University of the Witwatersrand, Johannesburg (1952).
National Botanic Gardens, Kirstenbosch, Newlands, C.P. (1958).
The Bews Botanical Laboratory, University of Natal, P.O. Box 375, *Pietermaritzburg* (1953).
Division of Botany and Plant Pathology, National Herbarium, P.O. Box 994, *Pretoria* (1951).
Departement van Plantkunde, Universiteit van Stellenbosch, Stellenbosch (1953).

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Adamson, Prof. R. S., Morton, Lochiel Road, Rondebosch (temporarily c/o Dept. of Botany, British Museum (Natural History), London, S.W. 7 - Great Britain) (1951).
Dyer, Dr R. A., P.O. Box 994, Pretoria (1954).
Levyns, Mrs M. R., Dept. of Botany, University of Cape Town, Rondebosch (1951).
Pocock, Dr M. A., 18 Milner Street, Grahamstown, C.P. (1954).
Reynolds, Dr G. W., P.O. Box 2097, Johannesburg (1955).
Weintroub, D., Transvaal Chamber of Mines, P.O. Box 809, Johannesburg (1952).

United States

University of New Mexico Library, Albuquerque, N. Mex. (1955).
The Herbarium, Dept. of Botany, Iowa State College, *Ames*, Iowa (1952).
University of Georgia Libraries, Acquisitions Division, Athens, Ga. (1958).
The University of Texas Library, Austin 12, Tex. (1955).
Louisiana State University, Library, Serials Division, *Baton Rouge 3*, La. (1952).
Indiana University, College of Arts and Sciences, Department of Botany, *Bloomington*, Ind. (1953).

Brooklyn Botanic Garden, 1000 Washington Avenue, *Brooklyn 25,* N.Y. (1952).

Gray Herbarium, Harvard University, 22 Divinity Avenue, *Cambridge 38,* Mass. (1952).

Farlow Herbarium and Library, 20 Divinity Avenue, *Cambridge 38,* Mass. (1957).

Serials Department, University of North Carolina Library, Chapel Hill, N.C. (1956).

Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, *Chicago 5,* Ill. (1952).

Rancho Santa Ana Botanic Garden, 1500 North College Ave., *Claremont,* Cal. (1951).

Dept. of Botany, Rm. 102 B & Z. Bldg., *Ohio State University, Columbus 10,* Ohio (1957).

Herbarium of Southern Methodist University, Dallas 5, Tex. (1951).

Michigan State University, Dept. of Botany and Plant Pathology, *East Lansing,* Mich. (1952).

Dept. of Biology, Kansas State Teachers College, Emporia, Kan. (1957).

University of Hawaii Library, Honolulu 14, Hawaii (1952).

Shell Development Company, 3737 Bellaire Blvd., *Houston 25,* Tex. (1958).

State University of Iowa, Dept. of Botany, *Iowa City,* Iowa (1951).

Bailey Hortorium, Sage Place, *Ithaca,* N.Y. (1951).

Longwood Foundation, Kennett Square, Pa. (1957).

Traub Herbarium, American Plant Life Society, *La Jolla,* Cal. (1955).

New York Botanical Garden, Bronx Park, *New York 58,* N.Y. (1951).

Texas Research Foundation, P.O. Box 43, *Renner,* Tex. (1952).

The Herbarium, Dept. of Biology, The University of Nevada, *Reno,* Nev. (1956).

The Library, University of California, Riverside, Cal. (1958).

California Academy of Sciences Library, Golden Gate Park, *San Francisco 18,* Cal. (1951).

Missouri Botanical Garden, 2315 Tower Grove Avenue, *St Louis 10,* Mo. (1955).

Dept. of Botany, U.S. National Museum, Smithsonian Institution, *Washington,* D.C. (1955).

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Aaron, I. M., 602 Sunset Drive, Butler, Pa. (1955).

Adams, W. P., Gray Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1957).

Allen, Dr C. K., Lake Hammersley Road, Pawling, N.Y. (1951).

Allen, Dr O. N., 212-A Bacteriology Bldg., University of Wisconsin, Madison 6, Wisc. (1951).

Anderson, Dr E., Princeton University, Fine Hall, Princeton, N.J. (1952).

Anderson, J. M., Jr., Box 525, Stigler, Okla. (1951).

Anderson, L. E., Dept. of Botany, Duke University, Durham, N.C. (1957).

Andrews, Dr H. N., Botany School, Washington University, St Louis 5, Mo. (PB) (1955).

Archer, Dr W. A., 4317 Rowalt Drive, College Park, Md. (1952).

Arnold, Dr Ch. A., Division of Botany, University of Michigan, Ann Arbor, Mich. (1955).

Axelrod, Dr D. I., Dept. of Geology, University of California, Los Angeles 24, Cal. (PB) (1955).

Bache-Wiig, Dr S., Dept. of Botany, Burton Hall, Smith College, Northampton, Mass. (1952).

Bacigalupi, Dr R., Jepson Herbarium, Dept. of Botany, University of California, Berkeley 4, Cal. (1951).

Baker, G. R., Dept. of Botany, University of Washington, Seattle 5, Wash. (1958).

Baker, Dr W. H., Dept. of Biol. Sci., University of Idaho, Moscow, Idaho (1952).

Baldwin, Dr J. T., Jr., Box 1588, Williamsburg, Va. (1952).

Banks, Prof. H. P., Dept. of Botany, Cornell University, Ithaca, N.Y. (PB) (1955).

Barghoorn, Prof. E. S., Harvard University, Biological Laboratories, Cambridge 38, Mass. (PB) (1955).

Barneby, R. C., Wappingers Falls, N.Y. (1951).

Baxter, R. W., Dept. of Botany, University of Kansas, Lawrence, Kansas (PB) (1955).

Beaman, Dr J. H., Dept. of Botany & Plant Pathology, Michigan State University, East Lansing, Mich. (1953).

Bell, C. R., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1956).

Benjamin, C. R., Culture Collection Unit Fermentation Section, Northern Utilization Research & Development Division, U.S.D.A., Peoria, Ill. (1958).

Benninghoff, W. S., University of Michigan, Dept. of Botany, Ann Arbor, Mich. (PB) (1958).

Benson, Prof. L., Dept. of Botany, Pomona College, Claremont, Cal. (1951).

Berry, Dr E. W., College Station, Durham, N.C. (PB) (1955).

Beyer, Dr A. F., Midwestern University, Box 1, Wichita Falls, Texas (PB) (1955).

Bigelow, Mrs H. E., Dept. of Botany, University of Massachusetts, Amherst, Mass. (1956).

Birdsey, Dr M. R., Dept. of Botany, University of Miami, Coral Gables 46, Fla. (1955).

Blake, Dr S. F., Plant Industry Station, Beltsville, Md. (1951).

Blakley, E. R., Santa Barbara Botanic Garden, Santa Barbara, Cal. (1951).

Blasdell, R. F., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1956).

Bodman, Sister M. C., 1020 West Sheridan Road, Mundelein College, Chicago 40, Ill. (1951).

Booth, Prof. W. E., Dept. of Botany and Bacteriology, Montana State College, Bozeman, Mont. (1951).

Bowerman, Miss M. L., University of California Herbarium, Berkeley 4, Cal. (1952).

Breitung, A. J., 1416 So. Glendale Ave., Apt. 6, Glendale 5, Cal. (1957).

Brown, Dr C. A., 1180 Stanford Avenue, Baton Rouge 15, La. (1951).

Brown, Dr D. F. M., Dept. of Biology, Eastern Michigan College, Ypsalanti, Mich. (1954).

Brown, R. M., Crater Lake National Park, Fort Klamath Rural Station, Klamath Falls, Ore. (1958).

Bryan, Dr E. H., Jr., Bernice P. Bishop Museum, Honolulu 17, Hawaii (1951).

Buchanan, R. E., Iowa State College, Room 316, Curtiss Hall, Ames, Iowa (1951).

Camp, Dr W. H., Dept. of Botany, University of Connecticut, Storrs, Conn. (1951).

Canright, Dr J. E., Dept. of Botany, Indiana University, Bloomington, Ind. (PB) (1955).

Chambers, Dr K. L., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1954).

Channell, Dr R. B., Dept. of Biology, Vanderbilt University, Nashville 5, Tenn. (1954).

Charette, L. A., 27 Ferguson Avenue, Burlington, Vt. (1953).

Chase, Mrs A., United States National Museum, Smithsonian Institution, Washington 25, D.C. (1952).

Chi Ling Chen, Yale University, Medical School, New Haven, Conn. (1957).

Clark, R. B., Rutgers University, New Brunswick, N.J. (1951).

Clausen, Dr R. T., Dept. of Botany, Cornell University, Ithaca, N.Y. (1951).

Clayton, T., 3700 White Bear Ave., White Bear 10, Minn. (1954).

Cobb, B., 25 East End Avenue, New York, N.Y. (1954).

Cohn, J., 108 Elm Street, Cranford, N.J. (1953).

Collins, Dr D. C., Suite n. 503, 7046 Hollywood Boulevard, Hollywood 28, Cal. (1951).

Conrade, S., Dept. of Botany, The Herbarium, Room 203, Colesium, Oregon State College, Corvallis, Ore. (1957).

Constance, Dr L., Herbarium of the University of California, Berkeley 4, Cal. (1953).

Cooke, W. M. Bridge, 1135 Wilshire Avenue, Cincinnati 30, Ohio (1951).

Cooley, G. R., Ghinsegut Hill, Rt. 2, Box 216, Brooksville, Fla. (1956).

Cooperrider, T. S., Dept. of Biology, Kent State University, Kent, Ohio (1958).

Core, Dr E. L., Dept. of Biology, West Virginia University, Morgantown, W.Va. (1955).

Correll, Dr D. S., Texas Research Foundation, Renner, Tex. (1951).

Cowan, Dr R. S., Dept. of Botany, U.S. National Museum, Smithsonian Institution, Washington 25, D.C. (1951).

Cridland, A. A., Dept. of Botany, Kansas University, Lawrence, Kans. (PB) (1958).

Cronquist, Dr A., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1954).

Cross, Dr A. T., Pan American Petroleum Corp., Research Center, P.O. Box 591, Tulsa 2, Okla. (PB) (1955).

Cuatrecasas, Dr J., U.S. National Museum, Smithsonian Institution, Washington 25, D.C. (1951).

Culberson, W. L., Dept. of Botany, Duke University, Durham, N.C. (1952).

Cull, Miss Irene, 200 Dixon Avenue, Peoria, Ill. (1951).

Dahl, Prof. A. Orville, Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (1952).

Daily, W. A., Dept. of Botany, Butler University, Indianapolis 7, Ind. (1956).

Daoud, H. S., Dept. of Botany, Duke University, Durham, N.C. (1958).

Davidson, R. A., 203 East Locust Street, Davenport, Iowa (1957).

Dayton, W. A., 4818 24th Street N., Arlington, Va. (1951).

Delevoryas, Th., Dept. of Plant Science, Yale University, New Haven, Conn. (PB) (1955).

Denison, Dr W. C., Edward Martin Biological Laboratory, Swarthmore, Pa. (1956).

Derrick, Dr G. E., Central State College, Edmond, Okla. (1953).

Diehl, Dr W. W., 1512 N. McKinley Road, Arlington 5, Va. (1951).

Dodge, Dr C. W., Henry Shaw School of Botany, Washington University, St Louis 5, Mo. (1951).

Dorf, Prof. E., Dept. of Geology, Princeton University, Princeton, N.J. (PB) (1955).

Dress, Dr W. J., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1958).

Dressler, R. L., Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis 10, Mo. (1953).

Drouet, Dr F., Dept. of Biology, New Mexico Highlands University, Las Vegas, New Mexico (1953).

Duman, Rev. Dr M. G., Catholic University of America, Washington 17, D.C. (1951).

Duncan, Dr W. H., Dept. of Botany, University of Georgia, Athens, Ga. (1952).

Dunn, Dr D. B., Dept. of Botany, University of Missouri, Columbia, Mo. (1954).

Earle, Dr W. H., Desert Botanical Garden of Arizona, Tempe, Ariz. (1951).

Ebinger, J. E., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1958).

Eggert, D. A., Dept. of Botany, Yale University, New Haven, Conn. (1958).

Ehrle, E. B., Dept. of Botany, Pennsylvania State University, University Park, Pa. (1956).

Elias, M. K., University of Nebraska, Conservation & Supply Division, 108 Nebraska Hall, Lincoln 8, Neb. (PB) (1955).

Erbisch, F. H., 421 Abbott Road, East Lansing, Mich. (1958).

Evans, Dr A. W., Yale University, Osborn Botanical Laboratory, New Haven, Conn. (1952).

Evitt, W. R., Jersey Production Research Company, 1133 North Lewis Avenue, Tulsa 10, Okla. (1958).

Ewan, Prof. J., Tulane University, New Orleans 18, La. (1952).

Fay, M. J., Dept. of Botany, Wisconsin State College, Eau Claire, Wisc. (1952).

Ferris, Mrs R. S., Dudley Herbarium, Natural History Museum, Stanford University, Stanford, Cal. (1951).

Flowers, Prof. S., Dept. of Botany, University of Utah, Salt Lake City 1, Utah (1952).

Fosberg, Dr F. R., 212 Holmes Run Road, Falls Church, Va. (1951).

Fuchs, Dr H. P., U.S. National Herbarium, Smithsonian Institution, Division of Ferns, Washington 25, D.C. (1954).

Fulford, Dr M., Dept. of Botany, University of Cincinnati, Cincinnati 21, Ohio (1951).

Fuller, A. M., Dept. of Botany, Milwaukee Public Museum, Milwaukee 3, Wisc. (1952).

Funkhouser, J. W., Jersey Production Research Company, 1133 North Lewis Avenue, Tulsa 10, Okla. (1958).

Garay, L. A., Oakes Ames Orchid Herbarium, 22 Divinity Ave., Cambridge 38, Mass. (1958).

Gier, L. J., Dept. of Biology, William Jewell College, Liberty, Mo. (1951).

Gilkey, Dr H. M., 136 N. 30th Street, Corvallis, Ore. (1951).

Gillet, G. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1957).

Gillis, W. T., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Gillispie, W. H., Dept. of Botany, West Virginia University, Morgantown, W. Va. (1958).

Godfrey, Dr R. K., Dept. of Botany, Florida State University, Tallahassee, Fla. (1955).

Goodman, Dr G. J., Dept. of Plant Sciences, University of Oklahoma, Norman, Okla. (1951).

Gordon, Dr R. B., Darlington Herbarium, State Teachers College, West Chester, Pa. (1952).

Gould, S. W., Thunder Mill, Opening Hill Road, Madison, Conn. (1957).

Grant, M. L., Iowa State Teachers College, Cedar Falls, Iowa (1951).

Gray, Dr J., Dept. of Geology, University of Texas, Austin 12, Tex. (PB) (1958).

Griffiths, A. Jr., 422 West South Street, Anaheim, Cal. (1954).

Guennel, G. K., Dept. of Conservation, Geological Survey, Indiana University, Bloomington, Ind. (PB) (1955).

Gundersen, A., Maplecrest Road, Catskill Mountains, N.Y. (1954).

Haas, Dr Th. Ph., Philadelphia College of Pharmacy and Science, Philadelphia 4, Pa. (1952).

Halicki, P. J., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Hall, Dr J. W., Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (PB) (1956).

Hall, Dr M. T., Dept. of Botany, Butler University, Indianapolis, Ind. (1951).

Hardin, Dr J. W., Dept. of Botany, North Carolina State College, Raleigh, N.C. (1951).

Harvey, Mrs. D. R., 5801 Adelaide Ave., San Diego 15, Cal. (1952).

Harvey, Dr L. H., The Herbarium, Montana State University, Missoula, Mont. (1954).

Hatcher, R. E., Dept. of Botany, University of Cincinnati, Cincinnati 21, Ohio (1957).

Hauke, R. L., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Heckard, L. R., Dept. of Botany, University of Illinois, Urbana, Ill. (1955).

Heiser, Ch. B. Jr., Dept. of Botany, Indiana University, Bloomington, Ind. (1951).

Hendricks, A. J., Dept. of Botany, Southern Illinois University, Carbondale, Ill. (1957).

Henry, Dr L. K., Carnegie Museum, Pittsburg 13, Pa. (1951).

Hermann, Dr F. J., Division of Plant Exploration, Plant Industry Station, Beltsville, Md. (1951).

Hiltunen, J., Dept. of Biology, Wayne State University, Detroit 2, Mich. (1958).

Hobbs, C. H., Dept. of Biology, Kent State University, Kent, Ohio (1951).

Hocking, Dr G. M., School of Pharmacy, Alabama Polytechnic Institute, Auburn, Ala. (1954).

Hodge, Dr W. H., Longwood Gardens, Kennett Square, Pa. (1952).

Hoffmeister, W. S., Jersey Production Research Company, 1133 North Lewis Ave., Tulsa 10, Okla. (1958).

Hollensen, R. H., Dept. of Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1958).

Holm, Dr R. W., Stanford University, Stanford, Cal. (1951).

Howard, Dr G. E., Dept. of Botany, University of Washington, Seattle 5, Wash. (1951).

Howard, Dr R. A., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1955).

Howell, Dr J. Th., California Academy of Sciences, Golden Gate Park, San Francisco 18, Cal. (1951).

Hu, Dr S., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Hughes III, G. C., Division of Botany, Florida State University, Tallahassee, Fla. (1958).

Hulbert, L. C., Dept. of Botany, Kansas State College, Manhattan, Kansas (1956).

Hutchison, P. C., Botanical Garden, University of California, Berkeley 4, Cal. (1952).

Huttleston, D. G., Longwood Gardens, Kennett Square, Pa. (1951).

Hyypio, P. A., Botanical Gardens, University of Michigan, Ann Arbor, Mich. (1953).

Iltis, H. H., Herbarium, Dept. of Botany, University of Wisconsin, Birge Hall, Madison, Wisc. (1951).

Imshaug, Dr H. A., Dept. of Botany, Michigan State University, East Lansing, Mich. (1952).

Irwin, H. S., Dept. of Botany, University of Texas, Austin 12, Tex. (1957).

Isely, D., Dept. of Botany, Iowa State College, Ames, Iowa (1951).

Jackson, Dr R. C., Dept. of Biology, University of New Mexico, Albuquerque, N.M. (1955).

James, Dr Ch. W., Dept. of Botany, University of Georgia, Athens, Ga. (1956).

Jarrett, Dr F. M., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1957).

Jervis, R. N., Dept. of Biology, East Texas State College, Commerce, Tex. (1953).

Johnson, Dr J. H., Dept. of Geology, Colorado School of Mines, Golden, Colo. (PB) (1955).

Johnston, Dr I. M., Arnold Arboretum, Jamaica Plain 30, Mass. (1951).

Johnston, M. C., C. Division, Fort Detrick, Md. (1955).

Jones, Dr G. Neville, University of Illinois, Dept. of Botany, Urbana, Ill. (1952).

Jones, Dr Q., U.S. Dept. of Agriculture, Agricultural Research Service, Plant Introduction Section, Beltsville, Md. (1955).

Just, Dr Th., Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, Chicago 5, Ill. (1952).

Kapadia, Dr Z. J., Dept. of Botany, Duke University, Durham, N.C. (1956).

Keck, Dr D. D., National Science Foundation, Washington 25, D.C. (1951).

Keefe, Rev. A. M., St Norbert College, West De Pere, Wisc. (1951).

Kiem, Stanley C., Fairchild Tropical Gardens, 10901 Old Cutler Road, Miami 56, Fla. (1958).

Kiener, Dr W., 1242 Pawnee Street, Lincoln 2, Neb. (1951).

Kimnach, Miss M., 5918 Jordan Avenue, El Cerrito 9, Cal. (1957).

Kobuski, Dr C. E., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Koch, Dr L. F., 207 Harker Hall, University of Illinois, Urbana, Ill. (1951).

Konishi, K., Dept. of Geology, Colorado School of Mines, Golden, Colo. (PB) (1958).

Korf, Dr R. P., Dept. of Plant Pathology, New York State College of Agriculture, Cornell University, Ithaca, N.Y. (1951).

Kruckeberg, Dr A. R., Dept. of Botany, University of Washington, Seattle 5, Wash. (1955).

Krukoff, B. A., Merck & Co. Inc., 161 Avenue of the Americas, New York 13, N.Y. (1951).

Kucera, Dr C. L., Dept. of Botany, University of Missouri, Columbia, Mo. (1952).

Lakela, Prof. O., University of Minnesota, Duluth Branch, Duluth 5, Minn. (1952).

Lane, Dr I. E., Dept. of Botany, University of Hawaii, Honolulu 14, Hawaii (1952).

Langford Abbott, Mrs M., Dept. of Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1958).

Langman, Miss I. K., 3509 Baring Street, Philadelphia 4, Pa. (1953).

Lawrence, Prof. G. H. M., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1951).

Lawton, Dr E., Hunter College, New York 21, N.Y. (1956).

Leffingwell, H. A., Jersey Production Research Company, 1133 North Lewis Ave., Tulsa 10, Okla. (1958).

Leonard, E. C., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1957).

Leppik, Dr E. E., Plant Introduction Station, Iowa State College, Ames, Iowa (1951).

Lewis, Dr H., Herbarium, Division of Botany, University of California, Los Angeles 24, Cal. (1953).

Lewis, W. H., Dept. of Biology, Stephen F. Austin College, Nacogdoches, Tex. (1952).

Li, Dr H., Morris Arboretum, Chestnut Hill, Philadelphia 18, Pa. (1951).

Little, Dr E. L., Jr., U.S. Dept. of Agriculture, Forest Service, Washington 25, D.C. (1951).

Lloyd, Dr John T., The Lloyd Library and Museum, 309 West Court Street, Cincinnati 2, Ohio (1953).

Loughridge, G. A., Culver Stockton College, Canton, Mo. (1951).

Lowy, Dr B., Dept. of Botany, Louisiana State University, Baton Rouge, La. (1954).

Lundell, Dr C. L., Texas Research Foundation, Renner, Tex. (1951).

McClintock, Miss E., California Academy of Sciences, San Francisco 18, Cal. (1951).

McClure, Dr F. A., 5507 Charles Street, Bethesda, Md. (1955).

McGregor, Prof. R. L., Dept. of Botany, University of Kansas, Lawrence, Kan. (1951).

McVaugh, Dr R., Herbarium, Museum Building, University of Michigan, Ann Arbor, Mich. (1951).

Maguire, Dr B., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1952).

Mamay, Dr S. H., U.S. Geological Survey, 338 U.S. National Museum, Washington 25, D.C. (1954).

Manning, Prof. W. E., Botanical Laboratory, Bucknell University, Lewisburg, Pa. (1958).

Martin, Dr G. W., Dept. of Botany, State University of Iowa, Iowa City, Iowa (1951).

Martin, J. S., 1321 Bayon Road, Route 2, Bellingham, Wash. (1954).

Mason, Ch. T., Jr., Dept. of Botany, University of Arizona, Tucson, Ariz. (1953).

Mason, Dr H. L., Herbarium of the University of California, Berkeley 4, Cal. (1953).

Mathias, Dr M. E., Div. of Botany, University of California, Los Angeles 24, Cal. (1951).

Mauldin, Miss M. P., Southwestern Seed Service, Route 2, Box 220, Waco, Tex. (1951).

Mehlquist, Prof. G. A. L., Plant Science Dept., University of Connecticut, Storrs, Conn. (1951).

Metz, Sister M. C., Our Lady of the Lake College, San Antonio 7, Tex. (1951).

Meyer, Miss E., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1955).

Meyer, Dr F. G., Plant Introduction Section, U.S. Department of Agriculture, Beltsville, Md. (1952).

Middleton, J. T., Div. of Plant Pathology, University of California, Citrus Experiment Station, Riverside, Cal. (1951).

Miller, A. H., 329 S.E. 19 Avenue, Minneapolis 14, Minn. (1956).

Miller, Dr H. A., Dept. of Biology, Duquesne University, Pittsburg 19, Pa. (1955).

Moldenke, Dr H. N., 15 Glenbrook Avenue, Yonkers 5, N.Y. (1951).

Moore, Dr D. M., 506 Vanderventer Ave., Fayetteville, Ark. (1951).

Moore, Dr H. E., Jr., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1951).

Moran, Dr R. V., Natural History Museum, Balboa Park, San Diego, Cal. (1952).

Morley, Dr Th., Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (1951).

Morton, Dr C. V., U.S. National Herbarium, Smithsonian Institution, Washington 25, D.C. (1952).

Mosquin, Th., Dept. of Botany, University of California, Los Angeles 24, Cal. (1956).

Mrak, E. M., Food Technology Division, University of California, Davis, Cal. (1952).

Muller, Prof. C. H., University of California, Santa Barbara College, Santa Barbara, Cal. (1951).

Noamesi, G. K., 415 N. Park Street, Madison, Wisc. (1956).

Ogden, Dr E. C., University of State of New York, New York State Museum, Albany, N.Y. (1951).

Ownbey, Dr G. B., Dept. of Botany, University of Minnesota, Minneapolis, Minn. (1951).

Ownbey, Dr M., Dept. of Botany, State College of Washington, Pullman, Wash. (1951).

Palmatier, E. A., Dept. of Botany, University of Rhode Island, Kingston, R.I. (1951).

Pancho, J. V., Bailey Hortorium, Cornell University. Ithaca, N.Y. (1957).

Papenfuss, Dr G. F., Herbarium of the University of California, Berkeley 4, Cal. (1952).

Parker, Mrs K. F., 6014 Kirby Road, Bethesda 14, Md. (1952).

Patrick, Dr R., The Academy of Natural Sciences of Philadelphia, 19th and the Parkway, Philadelphia 3, Pa. (1951).

Perdue, Dr R. E., U.S.D.A. New Crops Research Branch, Beltsville, Md. (1954).

Perry, Dr L. M., 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Piehl, M., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Poole, Prof. J. P., Dept. of Botany, Dartmouth College, Hanover, New Hampshire (1955).

Porter, Dr C. L., Rocky Mountain Herbarium, University of Wyoming, Laramie, Wyo. (1951).

Preece, Dr S. J., Dept. of Botany, Montana State University, Missoula, Mont. (1952).

Prescott, G. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Proskauer, Dr J., Dept. of Botany, University of California, Berkeley, Cal. (1956).

Radford, Prof. A. E., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1951).

Raven, P. H., Dept. of Botany, University of California, Los Angeles 24, Cal. (1958).

Ray, Prof. J. D., Dept. of Botany, Mississippi State College, State College, Miss. (1956).

Reed, C. F., 10105 Harford Road, Baltimore 34, Md. (1958).

Reed, Prof. F. D., Mount Holyoke College, South Hadley, Mass. (PB) (1955).

Reeder, Dr J. R., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1951).

Reese, W. D., Dept. of Biology, Southwestern Louisiana Institute, Lafayette, La. (1957).

Reis, Miss S. von, Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1956).

Ricker, P. L., 3740 Oliver Street, N.W., Washington 15, D.C. (1951).

Rickett, Dr H. W., New York Botanical Garden, Bronx Park, New York 58 (1951).

Roach, A. W., North Texas State College 5232, Denton, Tex. (1951).

Rock, H. F. L., Dept. of Botany, University of Tennessee, Knoxville, Tenn. (1954).

Rogers, C. M., Biology Department, Wayne State University, Detroit 2, Mich. (1958).

Rogers, Dr D. J., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1952).

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